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CONTENTS.

Original Communications.

Progress in Therapeutics. By Solomon Solis Cohen, M.D..... 361
Galvanism in the Treatment of Sciatica. By Frank H. Allen, M.D.. 368
Report of Interesting Cases, with Remarks—(*a*) Sclerous Infiltration of the Corpora Cavernosa; (*b*) Marked Atrophy of Testis Following Gonorrheal Epididymitis. By Abraham L. Wolbarst, M.D..... 369
Experience with Tannigen. By Chas. M. Clark, M.D..... 372
The Treatment of Croupous Pneumonia. By J. B. Norman, M.D.. 372
Copy Formula on Label. By B. Franklin Stahl, M.D..... 374
A Case of Tetanus Treated with Antitoxin. By H. L. Van Natta, M.D..... 375

Leading Articles.

The Treatment of Heart Disease in Childhood..... 377
Is it Justifiable to Use Iodide of Potassium to Aid Us in Reaching a Diagnosis of Pulmonary Tuberculosis?..... 379
The Relative Value of Certain Articles of Diet in the Treatment of Disease..... 380
Pain in the Ear in Childhood..... 380
Serum Therapy..... 382
Bottini's Operation for the Cure of Prostatic Hypertrophy..... 384

Reports on Therapeutic Progress.

Woven Gloves in Surgery..... 385
Aortic Aneurism..... 386
The Value of Iron and Arsenic in the Anemia of Tuberculosis..... 387
A Remedy for Sweating Hands..... 387
The Employment of Subcutaneous Injections of Gelatin in Hemorrhagic Smallpox..... 387
Prescription for Constipation in Women..... 388
Constant Medical Supervision—Sanatorium Treatment at Home for Patients Suffering from Tuberculosis..... 388
A Prescription for Seborrheic Eczema..... 388
Possibilities of Cure in Diabetes..... 389
Reply to a Standardization Critic..... 389
Vomiting in Diphtheria..... 391
The Rheumatic Heart, with Especial Reference to Treatment..... 393
Sleeplessness..... 394
Antityphoid Inoculations..... 395
Thyroid Extract in the Treatment of Tuberculosis..... 397
Dietetics of Bread and Butter..... 398
The Treatment of Ozena..... 398
The Treatment of Basedow's Disease by the Milk of Thyroidectomized Goats..... 399
The Influence of Coffee on the Nervous System..... 399
The Treatment of Boils in the External Auditory Canal..... 400
The Administration of Iron and Arsenic..... 401
The Use of Camphor in the Treatment of Pulmonary Tuberculosis. 401
The Treatment of Night Sweats in Consumption by the Use of Tellurate of Sodium..... 401
A Plaster of Oxide of Zinc..... 402
The Uses of Naphthol in Therapeutics..... 402
A Prescription for Psoriasis..... 402
The Use of the Sulphate of Lobeline in Asthma..... 402
The Influence of Anesthetics on the Permeability of the Kidneys..... 403
A Clinical Study of Heroin..... 403
Methylene Blue in Malaria..... 404
Food in Typhoid Fever..... 404
The Elimination of Methylene Blue. 404
The Treatment of Urticaria..... 404
The Treatment of Rickets in Children with Phosphorus..... 405
Prescription for Menstrual Pain..... 405
A Creosote Wine..... 405
Treatment of Constipation by Ipecac..... 405
The Treatment of Chorea by the Use of the Oil of Wintergreen..... 405
The Treatment of Bilious Hematuric Fever..... 405
The Treatment of Pelvic Neuralgia. 405
Treatment of Hemorrhoids with Chrysarobin..... 406
Home Remedy for Leg Ulcers..... 406
New Saline Injection Mixture..... 406
Dialyzed Digitalis..... 407
The Treatment of Rheumatism..... 407
Malarial Hematuria..... 409
Fracture of the Neck of the Humerus with Dislocation of the Upper Fragment Treated by Operation..... 411
The Causes and Treatment of Movable Kidney..... 411
The Choice of Operation for the Radical Cure of Inguinal Hernia..... 411
The Treatment of Bacteriuria..... 412
Prolapsus of the Rectum in Children..... 412
Postoperative Ventral Hernia..... 413
Iliac Colostomy..... 415
Cancer of the Breast and the Results of Operation..... 415
The Treatment of Rachitis..... 417
The Practical Value of the White Blood-count in Surgical Cases..... 417
Foreign Bodies in the Abdomen After Operations..... 417
Cardinal Sign of Colles's Fracture.. 418
A New Method of Treating the Ureter in Tubercular Disease of the Kidney and Ureter..... 418
Hysterectomy for Acute Septic Metritis and Peritonitis..... 419
The Justus Blood Test for Syphilis.. 419
Calculous Anuria Cured by Nephrotomy..... 420
The Treatment of Cystitis..... 421
Cancer of the Breast..... 422
A New Method of Performing Perineal Prostatectomy..... 423
Removal of the Superior and Middle Cervical Ganglia of the Sympathetic for Myxofibroma..... 423
The Surgical Aspect of Vomiting.... 424
Operation for Perforated Typhoid Ulcer Eighteen Hours after Perforation..... 424

Reviews..... 424

Correspondence.

London Letter..... 427
Paris Letter..... 429
Write the Formula on the Label.... 432
Electrode for Urethral Stricture..... 432

Original Communications.

*PROGRESS IN THERAPEUTICS.**

BY SOLOMON SOLIS COHEN, M.D.,

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The pleasant custom of our society calls upon the retiring president to signalize his departure from the chair by making an address to its members, and extends the time for such address to a sufficient period after he has been relieved from the cares of office to permit him to give his attention to the preparation of a paper deserving of consideration. I regret that I have not been able to fulfil more worthily the design of your constitution and custom, but the thoughts to which I shall invite your attention are of some importance, perhaps sufficiently so to atone for the crudity of their presentation.

We take up our time at these meetings, very properly, with practical matters, with reports of cases from which we can derive instruction in the management of future cases, or concerning which we may be enlightened by the criticism of our fellows; or

*Address of the retiring president of the Philadelphia County Medical Society, delivered March 14, 1900.

we bring before each other the results of our studies and investigations in the laboratory for criticism and comment and for mutual instruction. Most of our daily worktime, too, is occupied with the so-called practical matters of relieving those who appeal to us —or at least in endeavoring to relieve them —so that, perhaps, those of us who are not engaged in teaching, who are not engaged in research, pay but little attention to the theory of our art and our science; and some of us, perhaps the majority, consider that theoretical matters are unworthy of much attention—that the physician who is a theorist is unlikely to be a safe physician; that he is more likely to go astray after his false gods of hypotheses in pathology and "fads" in treatment than to occupy his time in learning the practical duties of his profession.

Yet I think this is a mistake. Whether we are theorists consciously or not, we are all theorists unconsciously, and the most "practical" act and the simplest in the treatment of the sick is guided either by correct theory as to the nature of the affection with which the patient is suffering and of the means applicable to its relief, or by an incorrect theory as to one or both. Therefore it is, perhaps, worth our while, once in a year, to review somewhat the theoretical principles upon which our practice is based, that we may see whether or not they are sound, and whether and how they point to future progress.

Anatomy, physiology, pathology, bacteriology, the various sciences with which physicians are concerned, do not directly interest our patients. The patient comes to the physician for relief from suffering, and the physician is above all else in the minds of the public, in the mind of the particular individual who seeks his aid, a healer, one skilled in the knowledge of the methods by which those disturbances called disease can be removed or relieved. Thus it is in therapeutics, especially in the practical application of remedial measures to the relief of the sick, that the physician comes into the most personal and intimate relations with his patient. Of course, it is a higher branch of our art and science to prevent disease, and to teach prevention. But when public and private sanitation have failed, or when through neglect of right living, public and private, disease has become established and application is made to the physician for relief, then the therapeutist must be first. The physician, as therapeutist, is the one who is sought.

In the history of the nineteenth century great reference will be made to discoveries in the exact sciences. The medical sciences have yielded their full proportion of these: discoveries in the structure and functions of the human body; discoveries in the agencies and processes of disease; the vast science of bacteriology opening for the first time with its knowledge, direct and indirect, and the possibilities to which it leads.

That great practical advances in treatment —apart from the marvels of surgery so well calculated to hold the popular eye—have also been made during the century is generally admitted, but whether these advances have been based upon the development of scientific principles, or are merely happy accidents, is disputed. While it is not my purpose to give a historical review or even to refer in detail to the observations upon which certain broad historical views may be based, yet it is, I think, possible to show by brief references to certain prominent events in the history of medicine during the nineteenth century that the gains in the data underlying the theory of therapeutics have been as definite and as useful as the improvements in practice.

Any scientific theory of recovery must be based upon scientific views of the causation and development of disease; and these in turn must be founded upon equally definite and rational views of the development, the normal constitution, and the normal functions of the animal organism. Scientific therapeutics must, therefore, follow scientific pathology; and its application, moreover, must depend upon accurate diagnosis. So long as guesswork constituted the principal portion of physiology and pathology, so long as diagnosis was vague and uncertain, so long empiricism necessarily dominated therapeutic practice and vague or misleading theories were constructed to satisfy the inquiring mind seeking for an explanation or even for a rational hypothetic basis of such practice. Here, perhaps, I must interpolate a word of qualification: I have no wish to follow the fashion of the day in decrying empiricism. In the absence of definite physiologic and pathologic knowledge, the alternatives submitted to the intelligent physician were, and always will be, rational empiricism or irrational dogmatism; and it is to the empiric school of Hippocrates rather than to its dogmatic opponents that must be ascribed the foundations of scientific medicine. Nor is it to be forgotten that observation at the

bedside may be as scientific as observation in the laboratory; or that the result of laboratory experience is as truly empiric, in the large sense, as the result of clinical experience.

In the domain of therapeutics the unscientific character of dogmatism cannot be better shown than by reference to that comparatively modern school of dogmatists founded by Hahnemann. The modern graduate of the college in our own city which bears the name of Hahnemann has departed widely from the theory and the practice of the founder of homeopathy; and what I shall say will have no reference to such heretical homeopathists.

Hahnemann and his early followers, rightly finding much irrationality, perhaps harmfulness, in the theory and practice of their contemporaries, sought for some guiding principle that might be applied in the treatment of all cases of disease, and which would obviate the apparent necessity of resort to the violent purgings, bleedings, and blisterings, and the nauseous polypharmacy then in vogue. But Hahnemann fell into an error worse than that of his contemporaries. He abandoned the methods of observation and induction by which, however crudely and imperfectly, physicians were guided; contemned the study of physiology and pathology; repudiated nosologic diagnosis; rejected with terms of opprobrium any belief in the curative powers of nature; and substituted for all these an absolute dogmatism entirely independent of observation, based upon a one-sided metaphysics, and affirming as a chief tenet the sole and universal curative power of drugs. The drugs were to be administered after a certain fashion, and to many this seems the most important feature of his doctrine; but, in reality, faith in the power of drugs and belief in their necessity form, for the philosophical inquirer, the greater member of the paradoxical couplet—paradoxical because in his writings Hahnemann insists, throughout, upon the intangible, spiritual nature of life and its processes, and the necessity for equally intangible and spiritual agencies as remedies for its derangements. From the necessity to reconcile these opposing beliefs arose the doctrine of the potentization by attenuation of medicinal substances, because thus only could their spiritual forces be released to act upon the spiritual life processes in health or disease.

There is always a class of educated—or half-educated—persons, whose training has been literary and artistic rather than scientific, to whom such mysticism in medicine will strongly appeal. In our own day almost equal fashion and vogue have been given to a similar delusion and to a method of practice built thereon, which, unwarrantably associating with itself the name and authority of religion, assumes the title of "Christian Science." The system of Mrs. Eddy and the system of Hahnemann have these things in common: that both assume to be revelations from God; that both deny the materiality of the alterations produced in the human body in disease; and that both assert the necessity of immaterial curative agents. The nature of these immaterial curative agents is different in the two systems—the spiritual forces set free from drugs by solutions, shakings, and poundings in the one case, the spiritual force of mystic or meaningless jargon and dislocated syntax in the other case—but this difference is also immaterial. I am not now concerned either in elucidating or in refuting their special errors, but merely in illustrating the inevitable tendency of dogmatism as opposed to rational empiricism in therapeutics. It can lead only to systematized delusions.

But while the rational physician of the present day must be an empiricist, he must also be a theorist. He must have a reason for that which he does and for that which he refrains from doing, in his endeavors to prolong life, to promote comfort, and to bring about recovery; and his experience as to the results of such doings or such refrainings must be the ultimate test whereby he determines the correctness of his reasoning and decides upon persistence in, abandonment, or modification of his course.

Progress in therapeutics, therefore, depends not only upon acuteness of observation at the bedside, not only upon accuracy of experimentation in the laboratory of physiology or chemistry or pharmacology, but also upon broadness of grasp and accuracy and acuteness of reasoning, in establishing general principles and in applying special deductions. While the therapeutic art will necessarily always outrun therapeutic science—as, for example, the use of cinchona in ague antedates the rational explanation of its action, only possible after the discovery of the malarial parasite; as, for example, the usefulness of mercury and the iodides in the cure of lues has as yet no satisfactory explanation—nevertheless, therapeutic science can advance and be followed rather than

preceded by advances in the therapeutic art, when we shall have learned to properly coordinate the discoveries now becoming independently developed in laboratories of medical and general science. Indispensable to such coordination seems to me that conception of vital processes in health and disease as the manifestations of a special mode of universal energy, which I have endeavored to establish by the introduction of the term "bionergy." Bionergy is vital force, but not the unrelated vital force of the ancients. Under given conditions it is producible from and convertible into all other modes of energy, as manifested in molar or molecular motion; and the term affords the conception necessary to bring the phenomena of normal and abnormal life into definite relation with our general conceptions of cosmic processes.

On the other hand, the development of a science of therapeutics has been seriously threatened during the present century by certain great discoveries made in other branches of medicine and biology and by the almost miraculous achievements of synthetic chemistry — one-sided interpretations of the discoveries and unbalanced enthusiasm over the powers of the new agents added to the materia medica being responsible for these temporary aberrations.

The development of the cellular pathology, with the discoveries it brought about as to the more intimate nature of lesions, and the attention which it concentrated upon morbid anatomy, was followed by an era of therapeutic nihilism. Or rather, as it has been said that the government of Russia is "a despotism tempered by assassination," so perhaps we might say in this respect that it was an era of nihilism tempered by credulity. Out of these equally unscientific errors we are only now beginning to emerge. Nor is it strange, in view of the extravagant ideas concerning the effects of remedies which had previously held sway, when but vague notions were entertained as to the actual constitution of the human organism and as to the changes therein, producing or produced by disease, that those who now saw with the enlarged eye of microscopy the new world of cells and cell alterations and realized the futility of attempting to influence these by the methods of drug administration that had been so positively claimed to be curative, should in reaction deny to art all power over disease and its processes; and should attribute recoveries simply to the failure of the agents of disease to maim or kill.

So, too, in another direction, the discovery of the large part played in etiology by bacteria led not only to a grossly inadequate conception of the rôle of the human organism itself in lesion and in symptomatology, but also to the fallacious notion that the agents of cure must be sought in germicides; so that for a time the corrosive chloride of mercury promised to become the physician's panacea and the surgeon's chief dependence. It is no small satisfaction to me to remember that I opposed these views from the beginning, even at the cost of being called "reactionary."

When Brown-Sequard first began to investigate the therapeutic properties of glandular secretions, and following this came the demonstrated usefulness of thyroid gland substance in myxedema, the animal extracts became the subject of foolish or fraudulent exploitation; but this has already been outlived, and the scientific study of the internal secretions, and of the physiologic and pathologic properties of animal tissues and fluids, offers great possibilities of increased therapeutic knowledge and power.

When the synthetic chemists gave us kairin, antipyrin, and the other coal-tar products, with their tremendous power in depressing temperature and in relieving pain, the temptation to produce sudden and striking results with these agents was too great to be resisted; and many physicians deluded themselves with the idea that in suppressing a symptom they were fighting disease. In nothing was this bad practice, due to want of a sound therapeutic theory, more disastrously manifested than in the treatment of the pandemic of influenza only ten years ago. If influenza then slew its thousands, antipyrin slew its tens of thousands. And only less disastrous was the use of this drug and its congeners in cases of typhoid fever and of pneumonia. As the medical historian comments upon the abuse of bloodletting in the eighteenth century, so will he comment upon the abuse of antipyretic medication in the nineteenth century.

But to digress for a moment. As in every evil there is some good, so in abused remedies there is still a power of usefulness. There is a legitimate field for the drugs of the coal-tar series in the palliation of certain symptoms of nervous origin; so also is there a field for bloodletting in the toxemias, as in pneumonia, in uremia, in puerperal infections, and the like, especially as a preliminary to the use of physiologic salt solution; and both of these applications are to be numbered

among the advances in therapeutic art and science.

Still another danger, arising out of the great power over symptoms of the modern synthetic remedies and the great improvements constantly making in the art of pharmacy, is the flood of proprietary remedies, secret or half-secret, that has been let loose upon the profession and the public. In so far as they are not secret, these threaten to destroy the art of rational prescription. Unused organs atrophy. The practitioner who is lazily contented to give the mixture exploited by some manufacturing firm, rather than to use his own brains to find a remedy or a combination of remedies suitable for the case of his individual patient, loses the faculty of selecting or combining remedies. In so far as these preparations are secret nostrums, they threaten to destroy all therapeutic science; for ignorance, which is the aim of secrecy, is the very antithesis of science. The physician who uses an alleged remedy of the composition of which he is ignorant, can have no scientific basis for his action, can add nothing to his own knowledge for guidance in future cases, can add nothing to the general store of knowledge of the profession. It is to be hoped that from the high ground this society has taken in regard to nostrums and nostrum advertising, it will not, even by inadvertence, depart.

Yet, as has been intimated, all these dangers are but temporary; they are incidents marring what is otherwise a steady advance toward science in therapeutics. The cellular pathology gave us definite knowledge concerning morbid processes and their results. The bacterial etiology has led by its further development to the correction of its own errors, so that now in the studies of the products of bacteria and their changes in character and power in various culture media and under diverse environment, and more especially in the investigations into the reaction of the organism chemically, physically, and vitally to their invasion, we are beginning to have the basis of at least a working hypothesis of infection and immunity, with much light upon the processes of normal recovery. These developments in scientific pathology, together with the advances that have been made in physiology and especially in the study of normal and morbid metabolism, are surely leading to the establishment of broad generalizations concerning disease and recovery on which a real therapeutic science may be built.* Meanwhile the advances in chemistry and chemical pharmacology not only give us, in the present, new and powerful agents in treatment; but by the particular relations which certain molecule groups are found to bear toward physiologic reaction and toward effect upon symptoms, promise, for the future, an important and exact datum for the selection of chemical remedies under given conditions of disease. A suggestion of the weightiness of such datum is afforded by those noteworthy experiments in which changes in the chemical constitution of the media in which the ova of echinoderms have been placed have been found to influence the development of the larvæ, even to the apparent reproduction of healthy adults from unfertilized eggs. The development of a queen bee by special feeding is likewise an instance in point.

But while we await the full fruition of these various lines of investigation, there are, nevertheless, certain important facts already available, not only in the therapeutic art, but also in the beginnings of the therapeutic science.

Recognizing in the living unit, known as the cell, the basis of all living organisms, we must look to its constitution and to its powers, as shown by its reaction to environment, for the explanation of the structure and the powers of the developed organism, even of so complex an organism as the human body with its great nervous development. This applies to pathology as well as to physiology; for the same structures, powers, qualities, susceptibilities, that determine normal reaction to normal environment—or health—likewise determine normal reaction to abnormal environment—or disease.

While the modern confirmations of Elsberg's doctrine of the continuity of bioplasm modify the old cellular theory in respects that we need not here touch upon, for our purposes they merely emphasize its important lessons in showing the interdependence of all tissues, organs, and functions. This, too, is the lesson finally emerging from the discoveries and theories of Weissmann. Though the original cell divide and re-

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*I have discussed this subject at greater length in my address before the Medical and Chirurgical Faculty of Maryland: "Some Thoughts Concerning Disease and Recovery, in Their Relation to Therapeutics." Proceedings, etc., Baltimore, 1896. The THERAPEUTIC GAZETTE, Sept. 15, 1896.

divide, its impress remains upon all its progeny, and the developed adult man contains no structure and no function that was not potential in the fertilized ovum.

Division of labor, specialization of structure and of function, have caused and are illustrated in the differing tissues and organs resulting from the unfolding of the ovum. These having assumed, during the long ages of evolution, certain forms, dispositions, and relations toward each other and the environment, such dispositions and relations tend to become permanent, constituting the harmony we term health. Disturbed by environmental change or internal failure, the organism seeks to restore them, and this *vis medicatrix naturæ* gives rise to certain unusual manifestations that mingle with the manifestations of disturbed order; the whole series of disturbances and compensations constituting the symptomatology of disease. All symptoms, therefore, are not morbid; on the contrary, many are evidences of salutary reaction. Disease and recovery are one continuous vital process. Thus it becomes necessary for the physician as therapeutist to make, not only a clinical and pathologic diagnosis, as accurately as the state of science and his own skill permit, but also a therapeutic diagnosis:* in order to determine which of the symptoms may indicate a tendency toward impairment of the natural order and thus invite opposition or modification by art, and which indicate a tendency toward restoration of the natural order and thus invite rather encouragement when present and invitation or imitation when absent. No better illustration can be found than febrile temperature,† which Hippocrates from his empiric observation taught was an indication of the attempt of nature to bring about recovery, but which only a few years ago modern physicians were fighting with depressing drugs. Recent laboratory observations show that the products of the pneumococcus after having been exposed to a temperature of 41° to 42° C. for three or four days, or to a higher temperature for a shorter time, will, when injected into the blood of animals, soon bring about the production of antitoxic substances, even to complete immunity in three or four days; while, if unsubjected to such heat, the antitoxin will develop only after some fourteen days of fever in the animal. We have here at least a suggestion of a general explanation of the utility of fever heat, and a confirmation of the opinion that some clinicians have frequently expressed that in pneumonia at least it is often unwise to try to reduce temperature.‡

So, too, in the demonstrated abstraction of sodium chloride from the serum in the process of neutralization of toxins, in the observations showing that dilution of certain antitoxic or alexic serums can be made without loss of power if sodium chloride solutions be employed, and considering in this relation the clinical observation of the decrease of chlorides in the urine in pneumonia, we have a partially empiric, partially scientific, foundation for the use of physiologic salt solution in the toxemias.

The antitoxins of diphtheria and of tetanus, the neutralization of snake-poisons by "antivenene" and by bile, point to the possible development of other natural means of protection or cure in other acute infectious and toxic diseases. Even the failures of tuberculin and its modifications are items of progress, emphasizing as they do the essential differences between tuberculosis and the acute transitory infections. But even more suggestive than these are the glimpses of the powers of the internal secretions, dating from Murray's happy experience with thyroid extract in myxedema, and not yet culminating even with the demonstration of the wonderful properties of the suprarenal gland.

That in the not too remote future we shall have substances of laboratory production replacing or supplementing the antitoxins and the antitoxin-provoking substances obtained from animals, and even resembling in some degree the extracts of animal tissues and secretions, is not too much to hope. But even beyond these agencies, and in their absence, there lies a great undeveloped field of therapeutics in which the workers are too few and the results not sufficiently studied with scientific exactitude. I mean those measures which, for want of a better term, I have called "physiologic therapeutics," and of which having spoken at length so often, I will not now weary you with any elaboration. But in continuance of the thought expressed a short time ago, concerning the

*Concerning the therapeutic diagnosis there is much more to be said, part of which I have published in my Dartmouth lectures on "Therapeutic Principles Governing the Selection of Cardiac Medicaments."—*New York Medical Journal*, Nov. 29 and Dec. 6, 1890.

†See also my lecture on "Some of the Therapeutic Relations of the Nervous System," THERAPEUTIC GAZETTE, March, 1891.

‡Personally I have seen the hot bath to produce free sweating, followed with hypodermoclysis of salt solution (F. P. Henry), do great good in some cases of pneumonia.

powers of the cell, the development of the organism by action and reaction with its environment, and the tendency of the order thus constituted to persist, I may at least suggest that those influences which have been most potent in bringing the body and mind of man to their present state should likewise be among the most potent influences for the maintenance of man's body and mind in health, and for their restoration, when disturbed, to normal conditions.

Sunlight, electric action, heat, cold, air, water, food, exercise, rest, and the animal, mental, and spiritual emotions, have been among the factors through which inanimate material has become living, living material has organized into cells, and cells have developed into succeeding forms, higher and higher, physically, mentally, and morally, until at last has appeared the man "but little lower than the angels."

By the intelligent application of similar factors, including the emotions, the physician can do much toward restoring the body and the mind diseased. Hydrotherapy has not its sole application in the Brand bathing of typhoid fever; it is not only in tuberculosis that the building up of vital resistance by food and air and sunlight and climatic influences brings the final victory to nature; nor are hysteria and neurasthenia the only affections in which rest and proper nutrition and passive exercise and electric stimulation, and the mental influence that can be rightly exerted by the right-minded physician, may bring about the restoration of health. What Brand has done for those stricken with typhoid, what Waldenburg and Bremer have done for consumptives, and Weir Mitchell for the hysteric and the neurasthenic, some of us should do for other sufferers. We should not abandon these great agencies so largely to the quack and the charlatan. In every medical delusion, even in homeopathy and in Christian science, there is an element of truth. The extensive experiments made by homeopathists with the use of inert remedies demonstrated the truth of Bigelow's teaching of the self-limitation of acute diseases; while the development of antitoxins, through the irritation of cells by attenuated cultures of bacilli and of their products, and the difference in effects of large and small doses of powerful agents, so strikingly shown in the case of suprarenal substance, permit us to see that in the homeopathic reaction theory of cure there is an adumbration of a scientific fact. So, too, the aberrations of the "Christian scientists" emphasize the undoubted power of the emotions, both in producing certain kinds of morbid action and in remedying them.

Therapeutics must progress, therefore, by recognizing that disease and recovery are alike vital processes, to be studied in relation to all the laws of life;

That the tendency of the natural order, the harmony of functions, the balance of relations, which we term health, is to persist and to become reestablished by internal reactions when its persistence and resistance have been temporarily overcome; so that the forces of recovery come from within, rather than from without;

That thus the agents provoking disease and the agents used as remedies must be considered merely as liberators of energy, intensifying or modifying natural processes, but introducing no new power or new quality into the operations of the organism;

That the physical and mental environment, as they have been potent in determining the evolution of the animal organism, are also potent in determining its order and in assisting to restore order;

That thus the most active remedial agents the physician can employ are those produced within the animal body itself in its physiological functions and compensations, and in its resistance to the attacking agents of disease;

That in the use of these agents or others to control, modify, or oppose the course of the disease or of special symptoms, or in refraining from all interference, the physician must be guided by a large knowledge as to the significance of symptoms as indications of morbid disturbance, or of salutary reaction;

That interference having definite object must aim to restore the balance of function, and thus the physician can either depress unduly exalted function and exalt unduly depressed function to normal levels, or exalt and depress normal functions to the abnormal levels of those altered by disease; and that while sometimes the one, sometimes the other, course is wiser, the choice must be deliberate;

That certain definite chemical relations between the agents of the materia medica and the structures and functions they influence are to be established;

That all secrecy as to the nature of remedies used must be scrupulously avoided and discountenanced;

And that those measures other than drugs which have proved so signally successful in certain striking cases must be studied and developed to the highest point of usefulness.

GALVANISM IN THE TREATMENT OF SCIATICA.

By Frank H. Allen, M.D.

Having had the most gratifying results in the treatment of a number of cases of sciatica by the galvanic current, I report the two following cases for the benefit of those who are not acquainted with the efficacy of this method of treatment in the above named malady:

Case I.—A. M., aged sixty, a farmer, was first seen in September, 1899. He was then almost unable to walk from pain and deformity. He had fallen through a hole in a hayloft and given the right leg a severe wrench about three months previously, and had had severe pains ever since, commencing in the hip at the point of emergence of the sciatic nerve from the pelvis, and extending downward, along the entire course of the nerve and its branches, to the dorsum of the foot. Pain was greatest in the morning, and the patient could scarcely dress himself on account of its intensity and the accompanying stiffness of the joint. But after he had managed to get dressed and had walked around the room for some time the lameness would partially disappear. The limb was shrunken and atrophied to a marked degree, and was exceedingly painful and sensitive to pressure along the course of the nerve.

He was treated three times a week, for twenty to thirty minutes at a time, with a galvanic current of from three to five milliamperes strength, the positive pole being placed over the region corresponding to the location of the sacral plexus, and the negative pole over the point of emergence of the nerve through the great sacro-sciatic foramen, and from thence, after a period of five or ten minutes, carried downward along the course of the nerve to its ultimate distribution. Part of the time a spinal roller electrode was used on the negative pole, and part of the time a simple sponge electrode, saturated with sodium chloride solution. For the positive pole a sponge electrode alone was used. Two or three times in the course of the treatment small fly-blisters were applied over the points of greatest tenderness along the course of the nerve, being put on the day following treatment with the battery, and left on until a slight bleb was raised. These spots were, of course, avoided in the subsequent treatments with the battery until they were well healed.

After the third treatment the patient began to show signs of rapid improvement, being able to dress himself with comparatively little pain, whereas before commencing treatment he would roll on the floor and howl with pain when he attempted to get into his clothes. He was also able to discard his cane, and at the end of three weeks almost all the pain in the affected limb had disappeared. However, the tenderness still partially remained, and the treatment was kept up twice a week for five weeks longer, the patient in the meantime being put upon quinine and iodide of potassium as adjuvants. At the end of that time all the pain and tenderness was gone, the limb had regained its normal size, and he had perfect use of it, doing his own work about the farm without the slightest inconvenience. Almost six months has now passed since he was discharged, and no sign of a recurrence has appeared, though the patient has been working out-of-doors in the cold and wet, feeding cattle and putting up ice.

Case II.—M. K., aged fifty-seven, farmer. First seen in October, 1899. Had then been suffering from sciatica for over two years. He had taken arsenic, quinine, potassium iodide, and various other drugs, besides being blistered with cantharides and mustard, without benefit, and for the past year and a half, at the suggestion of his medical attendant, he had been using morphine hypodermically, as a last resort.

Treatment was begun with the galvanic current and repeated every second day for about two weeks, in the same manner as in Case I, without the fly-blisters, and using a current of from five to ten milliamperes. In this case both sciatic nerves were diseased and there was marked tenderness over their entire course, with considerable atrophy of the muscles of the legs. He suffered intense pain all the time when not under the influence of the morphine. At the end of two weeks he showed marked improvement. He was able to walk with but little discomfort, and the pain had greatly diminished. Treatment was kept up for six weeks longer, the patient having purchased a sixteen-cell galvanic battery, and after being instructed how to use it, continuing the treatment at home. The result was most satisfactory, a complete cure being effected; and now after four months no sign of a recurrence has appeared.

The patient required some treatment for the morphine habit which he had acquired, and was put upon a course of gold and arsenic bromide, which accomplished the desired result.

I am treating a number of other cases with equal success with the galvanic current, and can testify from personal experience to its efficacy in long-standing cases of sciatica, when all medicinal treatment has been tried and has failed.

REPORT OF INTERESTING CASES, WITH REMARKS—(a) SCLEROUS INFILTRATION OF THE CORPORA CAVERNOSA; (b) MARKED ATROPHY OF TESTIS FOLLOWING GONORRHEAL EPIDIDYMITIS.

By Abraham L. Wolbarst, M.D.,
Assistant Surgeon, Genito-Urinary Department, Good Samaritan Dispensary, New York.

(*a*) TWO CASES OF SCLEROUS INFILTRATION OF THE CORPORA CAVERNOSA.

The first patient is forty-seven years old, married, the father of two children, both living and healthy. His father is still living at the age of eighty; his mother died at fifty-two as the result of an accident. The patient's general health has always been excellent. There is no history of rheumatism or gout, or other disease. Eighteen years ago he had urethritis, which has never been thoroughly cured, but has persisted in a chronic form, associated with a stricture of large caliber in the anterior third of the urethra. About ten years ago he says he had a "chancre." This lasted about three weeks and then disappeared. There is no history or present evidence of secondary or tertiary symptoms, although he complains of having had severe pains in the legs three years after the chancre's disappearance. Nor has he been under treatment for the constitutional disease at any time.

About eight months ago the patient first noticed the presence of a small, hard nodule on the dorsum of the penis, about one-fourth its present size, which has given him no pain at any time. It has steadily, though slowly, increased in size since then.

I first saw the patient about two months ago, in the service of Dr. Ware at the Good Samaritan Dispensary, where he sought treatment for his chronic urethritis. During the examination these masses were discovered. Since then the patient has been under observation, but has not been put under treatment.

This condition was first described in this country by Van Buren and Keyes in 1874, under the title "Chronic Inflammation of the Corpora Cavernosa." It is still sometimes spoken of under this title in the text-books, although more recent writers, notably Taylor, speak of it as a "sclerous infiltration of the fibrous tissue of the corpora cavernosa."

The etiology of this condition is obscure. It is met with only in those of middle age or advanced years. Various causes have been held responsible for its development, among them being rheumatism, gout, gonorrhea, stricture, and syphilis. Traumatism has also been assigned as one of the causes. Most recent authorities, however, eliminate syphilis as one of the causes.

The affection is a painless one, except possibly on erection of the organ. Examination reveals the presence of one or more firm, hard plates, situated in the superficial portion of one or both of the corpora cavernosa. The margins of these masses stand clearly defined, and may be regular or uneven, nodulated, and sometimes thickened. The deeper portions of the corpora do not seem to be involved in the process. On palpation the plates present a peculiar sensation of elasticity, not observed in bone or calcareous deposit.

Whether one or both bodies is involved depends on the extent of the process, which springs usually from the median line on the dorsal side of the penis and may spread to one or both of the corpora. If both are involved the plates may remain distinct, or they may be joined together, forming one large mass on the dorsum of the penis. In size these plates vary, although they seldom exceed half an inch in their greatest diameter. Bumstead and Taylor state that the largest plates they had ever seen did not exceed two inches in diameter. In this patient the infiltrated mass is about two inches in length, half an inch in width at its widest part, and gradually tapers to a point at the glans. There are no signs of acute inflammation at any time. The onset is never acute, always chronic from the outset, although the growth may be impeded from time to time.

In some cases, when the affection spreads so that the whole or a considerable part of the corpora becomes involved, there is greater or less interference with the physiological erection of the organ. In this condition the

organ is bent at the seat of the hardening, and for anatomical reasons erection is incomplete in that portion of the penis lying to the distal side of the lesion. A sudden twisting or bending of the erect penis may cause a fracture at the site of the infiltration.

The pathology is also obscure. It has been suggested by Keyes that the affection is probably "in its essence a chronic inflammation of a peculiar kind affecting the erectile tissue at a certain point, and so thickening and stiffening the naturally thin walls of the areolæ (and probably filling up the interspaces with fibrinous exudation) that they cannot be distended with blood during the erection of the rest of the organ."

As to the prognosis, little can be said. The plates may diminish in size spontaneously, but they never undergo degeneration. In this and other respects they somewhat resemble the syphilitic nodes which are sometimes found in the corpora cavernosa, but they differ in that they do not respond to antisyphilitic treatment. Nor do they respond to any other form of treatment. Large doses of potassium iodide and inunctions of mercurials are recommended; so is the wine of colchicum root. Galvanism has also been tried, and recently thyroid extract has been suggested.

In cases where the plates are superficially situated, and interfere materially with the functional activity of the organ, a cutting operation may be performed, entirely removing the infiltrated bodies; but this operation offers no certainty of restoration of function.

The second case is a man fifty-five years old, married. Previous history entirely negative. About eight years ago he had a "chancre" (probably a chancroid), which lasted about a month. It was followed by a left inguinal bubo, which ruptured spontaneously, and after treatment became well. He has had no subsequent symptoms of a secondary or tertiary character, and has not been under treatment at any time. At present he shows no signs whatever of syphilis.

About two years ago he had his first attack of urethritis, which lasted about eight weeks and was "cured." His urine is absolutely clear, and he shows no other signs of the urethritis. Owing to the extremely narrow caliber of the meatus, it has been impossible to examine the patient for the presence of a stricture.

The patient came to the dispensary seeking treatment for hemorrhoids, from which he had suffered for several months. Just before leaving he mentioned casually the fact that he had extreme pain at the glans penis during the erection of the organ, and asked if it could be relieved. The age of the patient led me to suspect the possibility of a sclerous infiltration of the corpora cavernosa being the cause of the pain. Examination at once revealed a hard mass, from one-fourth to one-half inch in diameter, and extending from the corona backward for at least three inches, beyond which it could not be distinctly traced.

This case does not present the broad, flat, plate-like masses that the preceding case exhibited; instead the mass resembles an irregular chip of wood about three inches long and from one-fourth to one-half inch in diameter at different points. The patient had never noticed the hardening process, which must have been going on for some time. He has been put under treatment with increasing doses of iodide of potash and inunctions into the masses of mercurial ointment.

(*b*) CASE OF ATROPHY OF TESTIS FOLLOWING GONORRHEAL EPIDIDYMITIS.

This patient is twenty-one years old, unmarried. His father died of heart trouble at the age of sixty; his mother is still living and well. The other members of his family are also in good health. There is no history of mumps, traumatism, syphilis, tuberculosis, or malarial fever. The patient had diphtheria about two years ago, with paralysis of the soft palate, followed by ulceration of the nasal septum.

Seven years ago, at the age of fourteen, he had his first urethritis. This lasted about four months. He was treated during the first two weeks of his attack by a friend, who gave him four drops of turpentine on a lump of sugar, three times daily. The discharge and burning pain continued for about six months, after which they disappeared altogether, and the patient considered himself cured. Two years later (1895) he suffered a second attack, which lasted six weeks, and also disappeared. Some six months thereafter his third attack appeared. After a duration of three or four weeks the right testicle became inflamed. He was in bed six weeks. Ice was applied, and the inflammation passed off, leaving a hard and thickened epididymis. About two years after this (1897) he had his fourth attack of urethritis. This time the same testicle again became inflamed, with all the acuteness and severity

of the first attack. He was treated at the German Dispensary, and the organ again resumed its normal shape, although the hardened and thickened epididymis remained so. In the summer of 1898, or about a year after his second attack of epididymitis, he noticed that the right testicle began to grow appreciably smaller from time to time. He has had no pain since his acute attacks.

When I saw the patient the first time, about a year ago, the organ was about twice its present size. At present the remains of the organ present a spherical mass, rather hard, exquisitely sensitive to the touch, about three-eighths of an inch in diameter. This is all that can be felt on the right side. On the left side the testicle is of normal size, very tender, though not painful to the touch. There is a marked varicocele on the same side which has existed for about ten years. The patient is highly neurotic. He has just been successfully treated for his most recent attack of urethritis.

Atrophy of the testis in this aggravated form is not often met with, although it may occur as the result of various processes of an inflammatory as well as non-inflammatory nature.

When the testis becomes inflamed either immediately or by metastasis, the inflammation may terminate in one of three ways: (1) in complete resolution with restoration of function; (2) in chronic inflammation followed by atrophy and loss of function; (3) in abscess, often followed by fungus of the testicle.

In the great majority of cases inflammation of this organ associated with gonorrheal urethritis terminates in resolution, with function unimpaired. Ordinarily the inflammatory infiltrate is not completely absorbed, but becomes organized and forms a hard nodule in the tail of the epididymis which may obliterate the efferent duct of the testis. Exceptionally the entire epididymis is thickened permanently; even the cord itself may become involved and may resemble an ordinary wooden lead-pencil in shape and consistence. In many of these cases, although both testes may have been involved in the inflammatory process, there is no loss of function, nor does sterility necessarily follow, though it often occurs.

In rare cases, however, when the inflammation is of a severe type and involves the structure of the testicle proper as well as the epididymis, the infiltrate may become organized and exercise so much pressure on the glandular substance of the organ as to cause it to undergo atrophy and become absorbed. This is probably the most plausible explanation which can be offered that will account for the atrophy which occurs in these cases.

It is known that division of the vas deferens is not necessarily followed by atrophy of the testis, although when the spermatic artery is divided, and especially when the plexus of nerves supplying the testis is extensively injured, atrophy or even gangrene is very likely to result.

While orchitis and epididymitis of gonorrheal origin is the most common form observed, other forms of testicular inflammation may also cause atrophy. It is maintained by some that atrophy of the testis following mumps is much commoner than is usually conceded; while others believe that atrophy is very rare in this condition, and that when it does occur the atrophy is but ephemeral, and that the organ may regain its normal size and consistence. That form of orchitis described by French writers as "orchite amygdalienne," or orchitis complicating tonsillitis, may also cause atrophy of the testis. Atrophy has also followed strangulation of the testis and epididymis, resulting from torsion of the spermatic cord, due to sudden and severe muscular effort. This is observed most often in cases of undescended or misplaced testis. Even slight bruises of the testicle, especially in youth, may be followed by atrophy. The epididymis in these cases is usually spared. After severe bruises, as well as gunshot and other wounds, atrophy very often follows.

Of the non-inflammatory conditions producing testicular atrophy, pressure by surrounding parts and interference with the circulation are probably the most frequent causes. This is seen in the atrophy which may follow hydrocele, varicocele, chronic hematocele of the tunica vaginalis, herniæ, and the tying of the veins of the spermatic cord in the operation for varicocele.

Syphilitic orchitis is sometimes seen. It may begin insidiously or acutely, and may attack the testicle alone or the epididymis as well. These gummata are usually painless and may soften and break down, forming fistulæ or fungus, or may lead to atrophy. Tuberculous disease may lead to the same results. Atrophy has been observed in the acute form of orchitis accompanying malarial fever. It is also seen in old age and in those suffering from premature senility, and it is said to have been caused by chronic alcoholism without other lesions.

For cosmetic reasons, an artificial testicle made of celluloid may take the place of the departed one, but there is no hope of restoring the natural organ.

EXPERIENCE WITH TANNIGEN.

By Charles M. Clark, M.D.,
Chicago, Ill.

In the course of a professional career of some forty-four years spent in civil and military life, there have come to me some new experiences, as have come to many others, in the domains of Medicine, Surgery, Pharmacy, etc., etc.—a complete *evolution* as well as *revolution* has taken place.

Calomel and jalap, opium and ipecac were always on duty, and venesection was practiced. But to-day what a magical change has taken place in the methods of pharmaceutical science, aided by the discoveries of modern chemistry, for the alleviation of the many and varied physical and mental distresses of poor humanity.

One of these new products of which I desire to write is tannigen. My first use of this drug was in 1898, in a case of diarrhea of phthisis. The subject was Mrs. M., of Chicago, aged thirty-five years, who had been suffering for the past three years with tuberculosis of the lungs. During the last three months of her sickness she had a watery discharge from the bowels every hour or two, which greatly diminished her strength and vitality. I had already given her all the approved remedies and astringents in order to check the drain, but with only a temporary effect. Then I remembered a sample of tannigen that had been sent to me for trial in serous discharges from the bowels, and I decided to give it trial.

I gave the tannigen in doses of ten grains every two hours, associated with bicarbonate of sodium, sugar of milk, and powdered ipecac. This had the result of reducing the movements of the bowels to two a day, and they had some consistency. The patient regained some strength, the appetite improved, and she was able to take exercise about her house.

In all watery discharges from the bowels, no matter what the direct or secondary cause may be—whether it be nervous or inflammatory, or from acute dyspepsia due to overfeeding as well as overstimulation, which gives flatulence with foul-smelling serous discharges—I have had recourse to tannigen in combination with subcarbonate of bismuth and resorcin.

There is one other fact that I wish to mention, and it may prove of interest to the profession at large. It is the relief that tannigen gives in leucorrhea when used in combination as follows:

℞ Tannigen, ʒ j;
Acid. boracici, ʒ ij;
Zinci sulphatis, gr. x;
Ext. hydrastis fl., f ʒ ij.

M. Sig.: Dissolve this in a cup of hot water before adding it for injection to a three-quart fountain syringe filled with water as hot as can be borne. Use the injection at bedtime and in the recumbent position with an obturator pipe.

In cholera infantum I have had but little experience with the use of tannigen—not sufficient to warrant any testimony.

It is my belief that tannigen is worthy of a more extended investigation by the profession.

THE TREATMENT OF CROUPOUS PNEUMONIA.

By J. B. Norman, M.D.,
Pilot Grove, Missouri.

Pneumonia is classed in the category of diseases due to the action of a specific germ. It is supposed to be caused by the pneumococcus or diplococcus of Fraenkel, but whatever be its etiology, suffice to say that in the present state of medical science we have no satisfactory specific treatment; we have no remedy which will materially shorten its course. We must therefore concern ourselves chiefly with how best to manage it until its course has been run. We must understand from the first that we are not treating a disease with the hope of having it succumb to our remedies, but we are treating a patient, an individual, with the sole object of sustaining the powers of life until the crisis is passed. Many cases are of so mild a character as to require little or no treatment, but many others may be materially benefited and often life may be saved by the timely and judicious use of proper remedial measures.

It is never unwise to begin the treatment of pneumonia with a purge, the best of which is calomel. If the patient is full-blooded, the pulse full and bounding, temperature high, and pain acute, blood may be extracted with benefit; but I prefer to give a few doses of veratrum viride, until its action on the pulse is perceptible. Its sedative influence upon the heart and vasomotor system lessens in

some degree, perhaps, the engorgement of lung tissue—"as it were, bleeding the patient into his own veins." For the pain and cough the phosphate of codeine hypodermically is efficient, and has the advantage that it is not followed by the disagreeable after-effects of morphine, particularly those relating to the stomach and bowels.

After the termination of the first stage, which usually occurs within a few hours, there are three essential indications to be met—rest, nutrition, heart sustenance. Every therapeutic agent which we employ should be carefully quizzed with reference to its effect, favorable or unfavorable, immediate or remote, upon these three prime indications.

Although the temperature ordinarily runs high, it will require little or no treatment unless it exceeds 104°, and not then unless it remains so for more than a few hours. If the fever is persistently high, it may be reduced by the wet pack or cold sponging, and cold applications to the head. Under no circumstances should the coal-tar products be given to reduce temperature in the second stage of pneumonia. They lessen the oxygen-carrying power of the blood, depress the heart, and rob the patient of the vital strength so much needed to carry him successfully through the crisis. Plenty of cold water, internally and externally, with a little acetate of potassium to keep the kidneys active, will be all the febrifuge needed.

Physicians, as a rule, give too much medicine, but especially is this true in pneumonia. Every dose of medicine given without a definite object is deleterious to the patient. Many remedies which appear to be indicated are really harmful, because of their tendency to derange the stomach and digestive organs. Among this number I would class the preparations of ammonium, and, to a lesser degree, morphine and digitalis. I do not mean that these remedies are to be absolutely interdicted, but that they are not to be used continuously, and not at all except under pressing indications. Alcohol, in the form of whiskey or brandy, acts both as a food and as a stimulant, and should be systematically given in small and regular doses.

Death in any case of simple uncomplicated pneumonia is due primarily to heart failure. There are two reasons why this is true: first, the pneumotoxins, carried by the blood, exert a degenerative influence upon the heart muscle as well as upon the other tissues of the body; secondly, the resistance offered by the solidified lung to the direct action of the right heart is so great that the heart becomes exhausted in trying to overcome it. The rational therapy of this condition is rest in the horizontal position, stimulate the emunctories of the body to eliminate the pneumotoxins, administer nourishment and heart tonics.

I think that digitalis, the best of remedies in organic valvular disease, is contraindicated in pneumonia.

The consolidated part of the lung presents almost a solid wall, through which the right ventricle can force the blood but slightly. The resistance to the flow of blood through the lungs raises the blood-pressure in the pulmonary artery, and the blood tends to be dammed back upon the semilunar valves into the right ventricle. The right ventricle finds it difficult to propel the blood through the consolidated lung rapidly enough to make room for the inflow of blood from the veins; the blood-pressure in the artery becomes so great that the semilunar valves become embarrassed and fail; the blood is dammed back into the ventricle; the intracardial blood-pressure becomes so great that the auriculo-ventricular valve becomes embarrassed and finally fails to close; the heart is distended with blood, and the muscle is put upon the stretch and ultimately paralyzed.

Digitalis increases the power of the heart's contraction, contracts the lumen of the arterioles, slows the heart, and raises blood-pressure. The arterioles and peripheral blood-vessels contain less blood under digitalis, hence the surplus blood has been forced in upon an already overcrowded right heart, increasing the work of the right ventricle and hastening the time when that organ will fail. Digitalis is merely a heart stimulant, whipping up the fagged heart to increased effort, and very kindly piling upon it more work to be done.

We have, however, in strychnine a heart tonic which meets the indications fairly well. It not only stimulates the heart, but it gives tone to the heart muscle, enabling it to withstand the increased work placed upon it. Under strychnine the heart muscle is less susceptible to fatigue and exhaustion, but its administration should be begun early. The physician who depends upon the pulse as an indication for strychnine will generally find he has begun it too late. The heart should be carefully auscultated at every examination. The second pulmonic sound is generally

sharp and well accentuated in pneumonia; when the semilunar valves of the pulmonary artery begin to be embarrassed, the second pulmonic sound loses its sharpness, becomes softer, lower in tone, and more or less muffled. Now is the time for strychnine to be pushed, and I would give it in one-thirtieth grain doses every four hours until its effects are perceptible, and later in smaller doses; but it is not to be discontinued, except for cause, until convalesence is established.

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*COPY FORMULA ON LABEL.**

By B. Franklin Stahl, M.D.,
Physician to St. Agnes Hospital, Philadelphia.

It may seem scarcely worthy of the consideration of the members of this society to seriously listen to a paper suggesting a subject of individual preference, and one whose possible merits have been so long known and so little appreciated. The mere neglect, however, of a given method does not necessarily prove its uselessness.

The fact that certain men who have been and are accepted as leaders in the scientific practice of medicine have found the plan of having a copy of the formula accompany the directions to the patient a good one, would justify us in seeking for some reason for the infrequent use of the advantage derived from a copy of the prescription being readily available when one would compare the effects produced with the medicine administered.

My experience as a druggist makes me perfectly familiar with the fact that prescriptions bearing a request for a copy of the formula are less welcome in the prescription department than those entailing less clerical effort. This, coupled with the fact that a large percentage of the prescription blanks used are furnished to the physicians gratuitously, and that the druggist who supplies the blank does not furnish one having this direction upon it, it seems to me furnishes an explanation as to why the request for a copy of the prescription is absent from a large number of the prescriptions compounded. Furthermore, it is not difficult to appreciate that many physicians would be very glad to have a copy of the formula accompany the medicine, but neglect or decline to take the time required to write the request for a copy upon the prescriptions they have written.

In the statements made I assume that I have explained why a large number of physicians do not have a copy of the formula accompany the compounded prescription.

It is a safe assumption that most physicians keep notes of the cases seen in their offices, and a large number make a record of the ingredients and dosage of the remedies prescribed. The advantage and satisfaction derived from this method require no extended comment at this time. The completed picture furnished by the record of the signs and symptoms, followed by the medical treatment and the subsequent results, is a sufficient aid to our studies in therapeutics to justify the expenditure of time required by the method followed. Then, again, the plan enables us to omit certain drug combinations that have been found unsuited to certain cases.

The contrast of the care exercised in the study of the patients who are able to come to our offices with the less accurate methods pursued in the treatment of the patients who are confined to the house certainly indicates the need of some change in the methods usually pursued in the treatment of the cases seen at home. To my mind we find in the plan of having a copy of the formula on the label the most available substitute for bedside notes in the treatment of this class of cases.

In a case of acute illness, even where we have the advantage of the services of a trained nurse, the records will not compensate for the absence of the knowledge of the drugs administered, and enable us to adjust the dosage of our remedies to the symptoms of the disease and effects produced by the remedy administered. The difficulties are certainly increased in a case seen infrequently, or where some of the visits are made at the office and others are made at the home of the patient.

It certainly is not good practice to give more detailed attention to the walking patient than we are willing to extend to the bed-fast case or invalid confined to the house.

I do not consider the possibility of making bedside notes of a patient, because the entire absence of the practice among men seeing many patients stamps it as an impractical method. In the method of having a copy of the formula on the label I see the most available substitute to be found in allowing the therapeutic measures adopted to indicate the progress of the disease.

The physician who has had training as a pharmacist may reasonably hope to recognize

*A paper read before the Philadelphia County Medical Society.

and identify the various standard preparations of the Pharmacopœia, but it is too much to expect him to have an analytical sense of taste or smell, or to be able to remember the ingredients and dosage of the combinations he is apt to prescribe. The practitioner of medicine who has been less intimately trained in recognizing the various preparations and compounds may not hope to be more successful in the matter of remembering his prescription or recognizing the compounded medicine than his brother practitioner. The limitations suggested in these remarks would indicate the utter impossibility of any physician adjusting the drug and dosage to meet the indications that arise in the course of a given case of disease, if he relies entirely upon his recollection of symptoms and drugs.

If I have established the fact that it is desirable to have the copy of the formula accompany certain medicines, then it is in order to inquire what are the possible objections to the method that would prevent its extended adoption.

From the standpoint of the physician the plan is open to the objection (1) that it would unduly familiarize the patient with the drugs employed in the treatment of disease; (2) that it could easily develop in the patient a preference for or objection against certain remedies; (3) that it would favor the habit of using familiar prescriptions for recurring symptoms; (4) that it would lend itself to the practice of loaning a remedy that has been found efficacious; and (5) that unless the terms used were *sufficiently abbreviated*, it might make it dangerous to employ the method when narcotics were prescribed. Some of these objections would have more force if it were recommended that the copy be placed upon *all* the remedies prescribed.

From the standpoint of the pharmacist the plan may be opposed (1) because of the extra clerical work entailed; (2) because of the tendency it might encourage in certain persons to seek a lower rate in having a prescription refilled. The first of these objections I hold should receive no consideration, because the graduate in pharmacy has been taught that "Pharmacy is the handmaid of Medicine;" and I feel that we are entirely justified in looking to the druggist for any aid he can lend us in practicing medicine on a basis that is more scientific than that represented in handing to the patient a number of tablets designated by the manufacturer's title or number. And while I have always recognized the right of a pharmacist to any patronage he is able to attract to his store, yet I should not hesitate in the least to discriminate against the druggist who persistently disregarded my request that he should copy the formula on the label.

The second objection that might be urged by the druggist should be met by the druggist himself. If he is satisfied with a reasonable charge, and secures a reputation for high-grade drugs and fair dealing, the danger of loss due to the customer shopping with his prescription will be more than compensated for by the increased loyalty of the physician.

There is one additional small but practical point, namely, the placing of the copy of the prescription. I hold that it will attract the eye of the patient less persistently if it is placed on the back of the bottle, rather than on the same label on which the directions for taking the medicine are written. In the case of a box being the container, the inside of the lid is a place where it will be less noticed than if it is placed elsewhere.

I desire to make clear the point that I do not regard it as necessary or desirable to place the copy upon all medicines ordered; that it is better to have printed on the blank the request for a copy, and then let the pen be run through the line directing that a copy be made; and finally, I would urge that we should not carelessly impose this task upon the pharmacist.

I feel that in the more extended adoption of the plan suggested there will result greater care in prescribing and better results in our methods of treatment.

A CASE OF TETANUS TREATED WITH ANTITOXIN.

By H. L. Van Natta, M.D.,
Seal, Ohio.

As the percentage of recoveries from tetanus is exceedingly small, and the curative effect of antitoxin has not been fully established, a report of a successful recovery of a patient afflicted with a most severe attack of the disease may be of interest.

Leefie L., aged five years, stepped on a rusty nail, which penetrated the sole of her foot to the depth of half an inch. On August 12, or four days after the injury, the child was noticed to have some difficulty in masticating her food. On the evening of the same day she was feverish and fearful. On the morning of the 13th her temperature was 100°,

pulse 120, and the posterior cervical muscles painful and quite rigid. The patient was unable to open her mouth as widely as on the day preceding. Two grains of chloral and potassium bromide every two hours was given; also small doses of quinine, and five minims of tincture of passiflora every two hours.

The patient grew worse until the morning of the 16th, at 9 A.M., when I was first called to the case. Her temperature at this time was 101°, the pulse 130, the respiration hurried and shallow. The masseter muscles were rigid, so that it was not possible for the patient to protrude her tongue beyond the central incisor teeth. I advised antitetanic serum, and telegraphed Parke, Davis & Co. at Detroit for some of it. A mistake in shipping directions caused delay to the 23d. In the interval the bromide and chloral was increased to five grains every two hours. An eighth of a grain of morphine was given often enough to control pain.

I did not see the patient from the morning of the 16th to the morning of the 20th. Her condition was then so alarming that the attending physician said she would die. The child was weak, her temperature 102°, pulse about 135, respiration 40 per minute. Opisthotonos was very pronounced. Spasms occurred on the slightest provocation. The patient up to this time, or rather from the 14th, was unable to take food, except very small quantities of milk and beef tea, nor was she able to sleep more than a few moments at a time. The bromide of potassium was increased to ten grains, and the chloral to eight grains, every two hours. I also gave whiskey freely. On August 21 she was unimproved, and on August 22 the pulse was becoming more rapid, reaching about 136, and weaker. On August 23 the pulse was 140, the temperature 102⅘°, respiration 44 and shallow. The paroxysms became more frequent. This was the condition at 10 P.M., when the antitoxin came to hand. I hesitated to administer it, as I did not consider we were giving it a reasonable chance; but the patient's father said, "It is our only chance." I injected ten cubic centimeters just below the scapula.

Contrary to my expectations, formed from reported cases, I did not notice any increase of the spasms that could be attributed to the specific fact that serum was used. The placing of the child in position to use the syringe brought on violent spasms, but I am certain that introducing the needle and expelling contents of syringe did not increase the paroxysms. In fact, in making the first injection the spasm had ceased before I withdrew the needle. The syringe was emptied slowly. In one hour after giving the first dose the child fell asleep, and slept fitfully until 2 A.M. on August 24, or three hours, when ten cubic centimeters more of the serum was injected. This injection was given near the site of the first. It did not cause nearly as severe spasms as the first. The patient then had a good two hours' sleep, the paroxysms not being violent enough to awaken her. At this time her pulse had fallen to 120, respiration to 38; her temperature was 101½°.

At 7 A.M. on August 24 the patient was able to open her mouth about half the normal extent; also to articulate so she could be understood, for the first time since she came under my observation. Her respirations were 36, and deeper. Her temperature was 101°. I gave the third dose of ten cubic centimeters of antitoxin at 5 P.M., the temperature being 100°, the pulse 120, and of good volume. She was now taking milk and egg-nog in sufficient quantity. General relaxation was present, except from knee down of wounded member. Here we still had as rigid condition as could possibly exist, but the patient could change her position in bed without aid. She continued to eat and sleep well for three days, during which time the temperature fell to 99½°. The condition of spasm still obtained in the leg; and at this time we had a sudden rise in temperature to 101°, and a recurrence of spasm, but of a less frequent and much milder type. Again I gave ten cubic centimeters of antitoxin every eight hours until three doses had been given. Then there was a fall in temperature to 99°, with relaxation of wounded member to ankle.

The subsequent history of the case was uneventful, except that we had a condition of clonic spasm in foot for a month after the child was about her play.

From the history of the foregoing case I draw two conclusions: First, all poisoned wounds giving rise to tetanic symptoms should be thoroughly cauterized; secondly, I discontinued the antitoxin entirely too early. After getting a temperature of 99½° the remedy should have been continued by giving at least ten cubic centimeters every eight hours until we had a normal temperature. It is very evident that the toxin is the cause of the fever, and it has not been entirely destroyed until we have a normal temperature.

The Therapeutic Gazette

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Leading Articles.

THE TREATMENT OF HEART DISEASE IN CHILDHOOD.

At a recent meeting of the Philadelphia Pediatric Society a series of papers were presented by different members dealing with the various aspects of heart disease in early life. The author of this editorial was asked to make remarks bearing upon the treatment of cardiac disease in childhood, thereby closing an interesting discussion which had dealt with congenital and acquired cardiac lesions in infancy, and with the prognosis and symptomatology of these affections. It was well pointed out by Dr. F. A. Packard, who dealt with the symptomatology of cardiac disease in childhood, that it is a condition largely devoid of symptoms until the state of the circulatory apparatus becomes exceedingly grave, and as a large part of our therapy in the treatment of cardiac lesions and their results in adults deals with symptomatology rather than with any attempt to cure the organic change which has taken place, it is evident from the start that little therapy can be addressed to the relief of conditions which in one sense do not exist. That is to say, the average child with cardiac disease does not present symptoms which need medication.

Without doubt one of the most important things which a physician can do for a child who is found to be suffering from a sufficiently grave cardiac condition to justify medical attention is to prescribe rest, which should consist not only in an abatement of violent muscular exercise, but also in the child being forced to remain at ease, if possible lying down for an hour, or even longer, two or three times a day, in order that its heart may rest as well as its body. This is a more important duty on the part of the physician than the prescription of any drugs or other remedial measures.

Another point of importance is to avoid giving the child large doses of cod-liver oil and similar substances which encourage growth and a deposition of fat. In a majority of instances of cardiac disease in childhood where the body of the child is small and dwarfed, it is so because the heart is not strong enough to supply a larger organism with blood, and if we produce an artificial condition of fat, it will necessarily increase the area of the blood-vessels, and thereby indirectly increase the labor of the heart. It is important, too, in treating these cases, both from the standpoint of treatment and prognosis, to recall the fact that puberty is the most dangerous time for patients suffering from cardiac lesions in early life. Many children pass through the early years of childhood with more or less grave cardiac lesions and with little distress, but on arriving at puberty show signs of ruptured compensation, and the majority of these children die of cardiac disease, or of some condition produced by it, at about this time of life, rarely living to adult years; although, of course, many incidents could be related in which puberty has been survived and a long life of usefulness has followed, notwithstanding the presence of grave cardiac conditions—or rather, to speak more correctly, life has continued notwithstanding the presence of a distinct valvular lesion which has, however, been amply compensated for by compensatory hypertrophy.

Next to rest comes, of course, proper feeding. Only the most nutritious and easily digested foods should be taken by such children, and care should be taken that the digestive apparatus should at no time be overloaded even with fairly digestible food, for it is a well known fact that distention of the stomach

and bowels very distinctly increases the labor of the heart.

In regard to tonics there can be little doubt that a certain group of these drugs which are rather more alterative in their action than tonic find a useful place in the treatment of these conditions. Of these, one of the first to be mentioned is arsenic. In many instances physicians make a grave mistake when prescribing for cardiac cases, in that they pay too much attention to the circulatory system instead of the heart and blood-vessels, and far too little attention to the condition of the blood itself. We cannot expect to make an improvement in the condition of the heart muscle if the blood which is flowing through its coronary arteries is impoverished, or if, in other words, the corpuscular and coloring matter is below the normal point. For this reason it is by no means a rare thing to find that patients do not benefit from the administration of cardiac medicaments until arsenic or perhaps iron has been added to their daily dose. If the case is chlorotic in type, of course iron is chiefly indicated, whereas, if there seems to be a lack of the corpuscular elements in the blood, then arsenic is still more needed. Another drug which is distinctly hematic in its influence is mercury when given in small doses. As Keyes pointed out many years ago, this drug, in the dose of $\frac{1}{500}$ of a grain three times a day to a child, will act as a distinct stimulant to the blood-making organs, and cause an increase in the corpuscular elements of the blood. In still other cases the value of mercury in the form of blue mass or calomel, for the purpose of unloading the bowels and relieving congestion in the portal circulation, is not to be forgotten. Those of us who are familiar with the practice of English physicians remember that they are in the habit of giving drugs to affect the liver in cases of cardiac disease more than we are on this side of the Atlantic; and while they may use them perhaps excessively, we are quite confident that American physicians do not use them enough, for engorgement of the liver, if relieved, results in much benefit to the patient. Under some circumstances there can be no doubt that the administration of bitter tonics, such as cardamoms, or gentian, or small doses of quinine, is of value for the purpose of increasing the appetite, and also for the purpose of improving the condition of the mucous membrane of the digestive tracts. So, too, we must not forget the employment of syrup of the iodide of iron in the treatment of those cases of cardiac disease which also have a strumous tendency, and require both the iodine for this condition and the iron for the anemia which is commonly associated with it.

In regard to the employment of digitalis in heart disease in childhood, the writer feels confident that in the majority of cases it is not the drug of choice. In his experience it fails to produce the good results in children that we so often obtain from it in adults, even when it is given in comparatively small doses. As a rule digitalis is given in too large doses both to adults and children, because the physician does not remember the fact that it is a drug which is very slowly absorbed, slowly eliminated, or destroyed in the body, and is one which maintains its influence for a very long period of time. It is customary with those who understand the action of this drug best not to give it for a period longer than seven or eight days without stopping it for several days, knowing full well that for the next three or four days after it is stopped its physiological effects will be maintained. Certainly, one or two minims of the tincture, or at the most three minims, three times a day is a sufficiently large dose for the average child suffering from valvular disease with ruptured compensation, although, as we have already said, we have not seen it produce very excellent results in childhood. In this opinion we were glad to find that several other members of the Pediatric Society agreed with us. A cardiac tonic of very much greater value is, in our opinion, strophanthus. One or two minims of the tincture of this drug given twice or thrice a day for a considerable period of time will often produce most excellent results. It has not the effect upon the blood-vessels which is possessed by digitalis, but on the other hand it must not be forgotten that in susceptible persons full doses of strophanthus sometimes produce griping pain or laxity of the bowels. Alcohol is very rarely needed in the cardiac diseases of childhood, except for the purpose of stimulating digestion and supporting the system. Its influence upon the heart is not such as would cause us to administer it as a cardiac tonic for a considerable period of time.

The last drug of which we wish to speak in the treatment of cardiac disease in childhood is strychnine. In previous editorials in the THERAPEUTIC GAZETTE we have stated our belief that this drug was very much abused when employed as a circulatory and nervous stimulant. And further observation

has confirmed us in this belief. There is nothing in the physiological action of strychnine which makes it wise for us to give this drug continuously in cases of failing heart in childhood. It goes without saying that in many instances of collapse or faintness, strychnine may be employed as a whip to urge on the circulatory apparatus to renewed endeavor until better and more constantly acting circulatory stimulants can be employed. But it ought not to be used day after day as a heart tonic; if it is so used it produces a condition of marked nervous irritability, increases the pulse-rate, and produces a fine, wiry pulse which is distinctly alarming, and which entirely disappears as soon as the drug is stopped. Of course, the same remarks hold true in regard to the use of nux vomica. We do not wish to be understood as stating that either strychnine or nux vomica ought never to be employed in heart disease in childhood. Our object is to point out that they should not be used as first-rate cardiac stimulants over a long period of time. They may be employed in very small doses as slight nervous stimulants, or for the purpose of aiding the digestion, as may any bitter tonic which also slightly stimulates the nervous system.

Lastly, it may be pointed out, although the fact is doubtless well known to most of our readers, that the mere presence of a cardiac murmur does not indicate the use of cardiac stimulants or of other forms of treatment. It is only when we have evidences of failing compensation that any cardiac medicaments are required. If the compensation is sufficient to make up for the leak which is suffered through a defective valve, there is no need of such treatment.

IS IT JUSTIFIABLE TO USE IODIDE OF POTASSIUM TO AID US IN REACHING A DIAGNOSIS OF PULMONARY TUBERCULOSIS?

We believe it is a fact which is usually recognized among physicians that iodide of potassium is a drug which is usually to be avoided in the presence of active pulmonary tuberculosis because its administration very frequently leads to the rapid breaking down of the consolidated area and the development of a cavity. Under these circumstances it is usually the endeavor of the physician to at least allay the pathological process sufficiently to permit of the patient resorting to some climate where perchance a cure may be reached. It is also a recognized fact that a cure is more difficult of attainment if the disease has gone on to the process of softening and breaking down with the formation of an excavation than if mere consolidation is present. Our attention has been called to this matter lately not only because we have seen iodide of potassium employed in full doses in one or two cases of pulmonary tuberculosis with the idea that its use was advantageous, but also by an article which has appeared in one of our contemporaries, in the course of which the author states that tuberculosis being suspected iodide of potassium was given to the patient in considerable doses for a period of eleven days in order to promote expectoration. At the end of this time, expectoration being present, the sputum was examined and was found to contain tubercle bacilli. We do not believe that this use of iodide of potassium is justifiable. It seems to us an instance in which laboratory methods are carried to excess. Surely the physical signs of pulmonary infection are usually sufficiently marked to enable us to make a diagnosis, and in obscure cases we do not believe that the physician is justified in hastening the breaking-down process in the lungs in order to satisfy himself that tubercle bacilli are present in the material which will then be coughed up. The physical signs or the general conditions indicating pulmonary tuberculosis are usually sufficiently marked to enable us to prescribe for the patient satisfactorily without the additional confirmatory evidence presented by the presence of bacilli. The first object of the patient in coming to the physician is, of course, to have a diagnosis made. But after all, his chief reason for consulting a physician, after discovering what is the matter with him, is to find out how he may be cured. We do not think that the institution of any methods designed to aid our diagnosis should be employed which, on the other hand, will hasten the progress of the pathological process and do harm. Certainly the administration of large doses of iodide of potassium is qualified to produce very deleterious effects in lungs which have areas in them of tubercular consolidation; and even if there is a syphilitic history, we believe that this drug should be administered to patients suffering from pulmonary tuberculosis with the greatest possible precaution, and that its influence should be watched most cautiously from day to day. Should any signs

of pulmonary breakdown, as is evidenced by moist râles, develop, it should be immediately stopped.

THE RELATIVE VALUE OF CERTAIN ARTICLES OF DIET IN THE TREATMENT OF DISEASE.

There is probably scarcely a reader of the THERAPEUTIC GAZETTE who has not been taught by the perusal of text-books, or by the lectures of his medical teachers, that in the treatment of Bright's disease certain articles of diet must be rigidly avoided, and among these that the various red meats or albuminous foods are to be put aside as largely as possible. Further than this, he has been instructed that if any meats are to be allowed the patient he is to use by preference white meat, such as the meat of chicken, in preference to dark meats or red meats, such as mutton and beef.

Personally we have never been able to see why a patient should be allowed to have small quantities of eggs, and white meat of chicken, and yet should be denied things such as roast beef, beefsteak, and mutton; and recently a number of articles have appeared in continental journals in which the question has been raised as to whether there is sufficient chemical and physiological difference between dark and white meat to justify us in permitting the use of one and forbidding the other. As a matter of fact, there are no chemical data which justify the prohibition of red meats. Such data as exist seem to be founded upon the supposition that dark meat contains a larger proportion of nitrogenous extractive than does white meat. But this is not borne out by the analysis of the various foods that we are discussing. On the contrary, chemical analysis shows that the difference between them, so far as extractive is concerned, is very slight.

Among the papers which we have mentioned we may quote that of Offer and Rosenquist, which was published in the *Berliner Klinische Wochenschrift* in the latter part of 1899. This careful analytical paper is also quoted in the *Scottish Medical and Surgical Journal* for February, 1900, and gives accurate tables, which show that there is no support apparently for the theoretical difference between white and red flesh, and these authors do not believe that we are justified in excluding red meat from the diet not only of cases of Bright's disease, but from the diet of those who are gouty—that is, provided that we are willing to permit these patients to eat meat at all. It is true that their views have been strongly combated by no less a person than Senator, who believes in the old-fashioned custom of excluding red meat from the diet of patients suffering from chronic kidney disease and gout. Whatever may be the ultimate result of this discussion, we believe that there is one point which is not to be overlooked, namely, that some of these patients at least may be allowed small quantities of red meat sufficiently frequently to prevent them becoming entirely disgusted with white meat, and also in sufficient frequency to prevent them from becoming restive and uncontrollable upon the diet which is ordered.

Finally, it is not to be forgotten that it is by no means necessary to employ skimmed milk as a drink and nutriment for these patients. Unskimmed milk, which contains a larger quantity of fat, is therefore far more nutritious, and is infinitely better for such patients if they can digest it, and most of the patients who can digest skimmed milk can digest ordinary good milk which has not been skimmed.

PAIN IN THE EAR IN CHILDHOOD.

This subject is an exceedingly important one, not only to the otologist and the pediatrist, but to the general practitioner. Indeed, it may be said, without fear of contradiction, that the general practitioner sees more cases of acute earache than does the professed otologist. In many instances the parents consider that they are sufficiently skilful to treat this complication of the various minor ailments or more serious diseases of young life; and in still other instances, when they call in the general practitioner, he takes this responsibility upon himself without any hesitation. If there is one department of special medicine more than another in which prevention can do more than any other measure directed to the relief of a patient, it is the department of otology. A clever lecturer once said that, so far as the diseases of the ear were concerned, the only instrument which is of any value is a syringe. While, of course, this is a shocking exaggeration, it nevertheless is a fact that after distinct organic change has taken place in the ear, very little can be done for the relief of the patient, except of course in those instances where a definite surgical operation is needed to relieve serious diseased processes. But even these

operations often fail to benefit hearing, being usually directed to the removal of purulent foci, which are endangering the patient's life. For these reasons we have read with great interest and approval an article which has recently appeared in our contemporary, the *Medical News*, by Dr. C. H. Halsted, of Syracuse, N. Y., entitled "The Significance of Earache in Children." In this important paper he points out the fact, so well known to otologists, that in the majority of cases of pain in the ear in childhood the condition is due to an acute or subacute or chronic catarrhal process, and is not due to neuralgia, as it is so often thought to be. As a matter of fact, neuralgia is not a common condition in childhood; whereas catarrh of the mucous membranes, particularly of the upper air-passages extending up the Eustachian tube, is as we know an exceedingly common condition, and as Halsted well says, it is by no means uncommon to find not only catarrhal processes in the ear, but actual grave purulent or pyogenic changes in the ear and mastoid, which have been considered neuralgic and treated as such, when in reality the condition is organic and exceedingly grave. The patient having been allowed, to use Halsted's words, "to suffer the tortures of the damned" for days, weeks, and in some cases for months, when a correct diagnosis and proper treatment would have obviated not merely all this pain, but, much more important, would have prevented a permanent impairment of the hearing. It will be remembered that in 1897 Ponfick reported one hundred consecutive autopsies in children under four years of age who died of various diseases. While many of these diseases were infectious, and some of them were of a character which is naturally complicated by disturbances or involvements of the middle ear, a greater portion of these children gave absolutely no signs of middle-ear disease during life, only ten being reported as having trouble with this portion of the head. Yet eighty-six of these children were found, on autopsy, to have suppurative or catarrhal inflammation of the middle ear. Somewhat similar statistics have also been reported by others. The remarks of Halsted hold true not only in regard to children, but also in regard to adults.

Careful physicians frequently meet with cases arising in the course of infectious diseases in which middle-ear trouble develops. Only a few days since we saw a patient ill with typhoid fever who gradually developed a condition of considerable excitation with his delirium, became difficult to control, and continually moved his head from side to side, as if suffering great mental disturbance. He was too ill with the disease and too delirious to be able to describe any of the symptoms from which he was suffering. Finally he became so difficult to manage that it was at one time thought that he would have to be put under physical control, but at about this time it was noticed that a large quantity of purulent material was being discharged from one ear, and with the escape of this fluid he became quiet. Evidently the poor fellow had really been suffering from a typhoid infection of the middle ear, and the cause of his difficulty became manifest only when nature ruptured the drum and allowed the accumulation of fluid to escape.

We know of another instance in which during typhoid fever some pain was complained of in the neighborhood of the ear and vertigo was a marked symptom. The attending physician considered, however, that it was probably dependent upon a slight catarrhal condition of the middle ear, and ignored it. Shortly after that a violent inflammation developed in the mastoid, and this in turn developed into a purulent meningitis, which caused the patient's death. When it is remembered that suppuration is an inflammatory process in the middle ear and may occur without the development of very violent pain which forces the patient and physician to examine this organ, it becomes all the more manifest that this possible complication of the various infectious diseases should never be forgotten by the attending physician; and in delirious patients and in young children—too young to describe the localization of their pain—constant restlessness, screaming, or other manifestations of suffering, should always cause an examination of the ear to be made at the time the physical examination of the rest of the body is performed, as these secondary processes in the middle ear are capable of producing acute conditions, which are dangerous either because they produce deafness, or because they cause suppurative changes in the mastoid. They should be given immediate attention, because if acute conditions are not produced which are worthy of immediate medical or surgical interference, it is a fact that a majority of cases which become deaf in later life have the first difficulty in their earlier years, when catarrhal processes are set up which do not receive proper attention. After many

months or years have elapsed the chronic catarrhal process, or perhaps suppurative process, which has been in existence for an unknown length of time, finally produces such grave changes in the auditory apparatus that all efforts for the relief of the patient are in vain, and he becomes doomed to a gradually increasing deafness which is distressing to both himself and his friends.

We think that Dr. Halsted has performed a very distinct service in calling the attention of the general practitioner to this important matter. Otologists well recognize it, but we fear that general practitioners are too much in the habit of treating such cases in their early stages by measures adapted solely to the relief of pain, and these measures are in many instances wrong. We refer particularly to the common habit of dropping warm oil and laudanum or glycerin into the external auditory canal for the relief of earache. There is no reason why inflammations in this portion of the body should not be treated as inflammations are in other portions, and there is every reason why the strictest laws of antiseptic cleanliness should be enforced from the beginning of an attack of pain in the ear, not only for the purpose of preventing immediate complications, but also so that the ear may be in good condition should any operative interference be required.

Children who are in the habit of having attacks of earache should not as a rule be treated by the general practitioner unless he has had experience in this line, but should be referred at once to some competent otologist who will be prepared to determine the exact character of the lesions which are present, and institute those measures which are necessary for its cure. If we have succeeded in doing nothing else in this editorial but impressing upon our readers the importance of regarding minor troubles in the ear as grave, we will have done them and their patients a good service.

SERUM THERAPY.

Immunity against bacteria and their products may be either natural or acquired. Dunham states that the most philosophic theory of immunity that has yet been advanced is Ehrlich's side-chain hypothesis. The protein molecule is exceedingly complex, and the decomposition products depend upon its chemical constitution and the influences governing its cleavage. From a chemical standpoint these complex molecules are made up of nuclei of closely united atoms, to which are attached, less closely, different atomic combinations or radicles; the latter if complex are called side-chains, these being bound together by the central nucleus into one system of atoms. These side-chains themselves, however, may represent the grouping of many radicles to a central atomic group; hence most complex molecules may result. Into any of these radicles new atomic combinations may be introduced, affecting the properties of the whole system, provided they can replace some of the radicles or atoms of the original molecule; or the molecule may exhibit cleavage, splitting it into simpler combinations of chemical nuclei or radicles, and the nature of the resulting products will depend upon the conditions in which the splitting takes place.

Ehrlich assumes the existence of such complex molecules within the cells of the body, these, indeed, being necessary for the normal cellular function. Toxic substances combine with the side-chains, affecting the functional activity of the molecule, and so altering the metabolism within the cell. Efforts are made to replace the side-chains which have been disturbed by the poison. This process Ehrlich calls "functional hypertrophy," which produces an excess of side-chain radicle, beyond the immediate functional needs of the cell. This excess is eliminated from the cell and appears in the circulating fluids as an antitoxin. According to this theory, the antitoxin produced must bear a definite chemical relation to the poison which has called forth this production. Side-chains which constitute the chief factor in susceptibility when they are constituent parts of a cell become the principal agents in immunity when freed from that connection and dissolved in the circulating fluids.

The toxic effect of a given poison may be localized. The particular side-chains having an affinity for the toxins must be confined to the tissues susceptible to the poison, as in the case of the toxin of tetanus, and should be found only in the central nervous system. In such a case those tissues should be able to neutralize to some extent the toxins. Experiments with tetanus have shown this to be the case. An emulsion of brain in a fluid containing those poisons has a neutralizing action on the toxins, subsequent injection of the mixture into susceptible animals not producing the tetanus.

An actively immunized animal produces

antitoxic substances which are present in the blood in solution, and which remain in the serum after the clotting of the blood. This serum is used in passive immunization or serum therapy. Thus passive immunity differs from active immunity, since the antitoxins introduced into the blood are not constantly replaced but are gradually eliminated.

To obtain a curative result from the use of antitoxins, much larger quantities are required than to confer passive immunity. Toxic immunity and immunity to infection, though closely related, are distinct. Thus an animal may not react from a given bacterial inoculation because the bacteria are killed or cannot develop, and yet it may be susceptible to the toxins produced by that same bacterial species. Dunham states as an example of this that the serum obtained from animals actively immunized through the agency of diphtheria toxins or dead broth cultures of that bacillus, possesses both antiinfectious and antitoxic properties; while that from animals immunized with dead bacteria freed from adherent toxins has a germicidal action on the bacillus, but does not neutralize its toxins—that is, it is exclusively antiinfectious.

Dunham's very clear description of an extremely complex subject thus outlined is followed by an article on "Tuberculins and Their Use," by E. A. de Schweinitz, which describes the method of preparing the old tuberculin and the new T. R., stating that the latter, or tuberculo-plasmin, is a solution of the substances which have been produced within the cells as the tubercle germs develop. He states, after a review of the literature of the subject, that T. R. has given no better results in the treatment of animals or men than those which were secured by the use of the old tuberculin, except that the secondary symptoms have not been so pronounced. In any method of treatment he states that we must always remember that we can at present hope to neutralize only certain of the poisons of tuberculosis germs, and that the natural immunity and resistance of the animal cell must be relied upon for assistance.

From a diagnostic standpoint Beck's observations, made on over four thousand patients, are interesting. In over one thousand the diagnosis was determined by the use of tuberculin; and de Schweinitz holds that this should always be used in skilful hands in diagnosing tuberculosis and in determining whether the disease has been arrested or cured.

Lambert, writing upon the subject of the antipneumococcus serum, and particularly of Pane's serum obtained from turkeys, states that this serum does not seem to shorten the duration of the disease, nor cut short the pneumonic process in the lungs, nor bring about the desired crisis. But it does seem in certain cases to prevent a general pneumococcus septicemia, and thus it may save life.

Park, contributing a careful study of the use of diphtheria antitoxin in New York, describes the method of administering the medicament, the amount to be administered, the number of injections in a single case, and states that the early use of antitoxin does great good in diphtheria, and that it should be employed in all cases where the onset is active without waiting for cultures. In mild cases already fully developed or on the mend when first seen, the use of antitoxin is a matter of minor importance, as they will do well anyway. It should be employed in all cases suitable for immunization. It gives a guarantee of safety of at least two weeks, a period which can be lengthened at will by repeating the dose. He shows that the average mortality since the use of antitoxin has been markedly reduced.

Fitzpatrick states that the serum therapy of yellow fever is still in the stage of investigation and does not appear to warrant any conclusions other than that the blood-serum of the bacillus icteroides does not cure nor modify the disease, and that further investigation is necessary.

Lilienthal states that the efficacy of antitetanic serum, as now prepared, has not been proved.

Coley states that by the use of mixed toxins of erysipelas and bacillus prodigiosus there is a probability of saving more than twelve per cent of hopeless sarcomata.

This general *résumé* of serum therapy is of great value, since the papers have been contributed by men of special experience and skill in these lines of work, and are actuated by a true scientific spirit. There have been exaggerated claims made for this method of treatment, based in the main upon florid imaginations and limited experience. It is apparent that with the exception of diphtheria the whole question of serum therapy is still in its experimental stage; and hence, when the injections are made for the cure of pneumonia, blood poison, tetanus, or tuberculosis, the fact should be clearly understood by the patient as well as by the physician that the treatment is as yet an experimental one.

BOTTINI'S OPERATION FOR THE CURE OF PROSTATIC HYPERTROPHY.

The most important communication which has yet appeared on this side of the Atlantic concerning the Bottini operation for enlarged prostate is that of Meyer (*Medical Record*, April 28, 1900). As is well known, this operation, which consists in removing the prostatic obstruction by means of the galvanocaustic knife introduced through the urethra, was abandoned for many years as dangerous and futile. Recently, however, a greatly improved instrument and reliable sources of electricity, together with means for the accurate measurement of currents and a much clearer conception of the practical applications of genito-urinary asepsis, have removed many of the dangers incident to the operation and have rendered it a much easier and more effective one. That this operation can cure in certain cases many scattered reports have abundantly proven. That it will do so in the majority of cases and produce a permanent cure is not accepted as demonstrated by the majority of surgeons.

Meyer's experience, which covers thirty operations on twenty-four patients, seems to show that with a modern instrument, an efficient battery, and a proper technique, the percentage of cures is so large that no surgeon can afford to exclude this method of treatment. Bottini claims not to have seen a single recurrence in all of his more than eighty cases. Meyer reports eleven cases which he states are so far cured. Freudenberg, in twelve selected cases, notes that eleven were cured after several operations.

Meyer's definition of a cure is "complete elimination of residual urine or reduction of the same to an insignificant amount; the return to normal frequency of micturition; and the disappearance of vesical catarrh."

Aside from its main purpose the operation is attended with certain other advantages. It causes disappearance of vesical spasm, it cures constipation (which is usually present), and occasions an improvement in the general condition, as shown by increase of weight. Its action upon painful contraction of the vesical sphincter is comparable to that of forcible stretching or division of the sphincter ani muscle. Moreover, the division of the glandular tissue interferes with the former blood-supply, and thereby prevents intermittent congestion.

Meyer holds the operation should be done as soon as it is necessary to give the catheter into the hands of the patient himself. Prostatectomy he considers advisable only in cases of fibrous prostates, provided the patients are not too far in the seventies, and seem able to stand the operation under general anesthesia. Under other circumstances the Bottini operation is to be preferred. When, following the operation, the patient is tortured by a continuous painful vesical spasm, accompanied by inability to empty the bladder sufficiently, a second operation should not be delayed more than two or three weeks at most.

Meyer notes one case which improved by a second operation and was made worse by a third.

Among the complications which have been observed during operation are: perforation of the bladder, to be avoided by filling the bladder with a liquid or gaseous medium. Perforation of the urethra with the electric knife, not easily to be avoided if the work is done thoroughly. This complication is likely only in cases of extremely soft prostates. Under such circumstances the incision should not exceed two centimeters in length. Of the late complications, there have been noted urethral fever, true sepsis, pyemia, embolism into the lungs, absolute retention, hemorrhage, and painful spasm at the neck of the bladder. The latter complication is a frequent one, especially in cases of a large median lobe and too short an incision. Indeed, Meyer believes that this spasm is due to the fact that the incision is not carried to a sufficient extent through the prostatic urethra.

In regard to the length of the incision, this, he considers, constitutes the most important and the most difficult point in the technique of the entire operation. When the prostate is fibrous, the urethral length may serve as a reliable guide. Such a prostate can be but very little compressed. If the urethral length is twenty-nine centimeters, the incision may with propriety be eight centimeters long, because it is well known that the normal urethra is on an average twenty-one centimeters long. In other words, the cut may be made to correspond to the difference in length between the normal urethra and that in the given case.

A useful clue in regard to the required length of the incision is furnished by rectal palpation. If an assistant with a long finger, the length of which has been determined, palpates the tip of the instrument, as soon as

the prostate has been firmly hooked, he can determine the exact distance of this tip from the anal ring. He should again introduce his finger, measuring the distance of the lower end of the prostate from the sphincter muscle, and by deducting the latter measurement from the former the palpable length of the prostate per rectum is given. The length thus found can be compared with the abnormal length of the urethra previously ascertained. If the length of the incision is made exactly to correspond to the rectal diameter of the prostate, the cut is often not sufficiently long. It is therefore well to make the incision from one to one and one-quarter centimeters longer than the longitudinal diameter of the prostate found per rectum.

When the glandular elements preponderate in the prostate, when this organ is very compressible, the length of the cut cannot be determined beforehand. Under such circumstances the incision should not be longer than one or two centimeters. Meyer has twice in such cases perforated the urethra by making too long a cut.

As to the number of incisions, the posterior and the two lateral lobes are cut. The anterior incision is strongly discouraged. The knife is passed twice through the groove of the posterior incision. The depth of the incision is one and five-tenths centimeters. The knife should be heated to a white heat.

Meyer's paper clearly shows that many of the failures which have resulted from the trial of Bottini's method, and which are in the main unpublished, are incident to an imperfect technique. Often the defect lies in the battery, which does not properly or regularly heat the knife; often it is dependent upon too short an incision; sometimes a lack of manual dexterity in handling the instrument.

His reports of cases show that the operation requires practice, may be attended by serious, sometimes dangerous, complications, and is not always successful. It also shows that a radical cure may be effected without the use of the general anesthetics; that the mortality is low; that even when it fails to cure vesical obstruction, it will almost certainly relieve the harassing tenesmus and pain which sometimes constitute the most distressing and dangerous symptoms of prostatic hypertrophy.

Reports on Therapeutic Progress

WOVEN GLOVES IN SURGERY.

According to the *Medical News* of January 27, 1900, at a recent meeting of the Chicago Medical Society Dr. COLEMAN G. BUFORD, a former assistant of Professor Fenger, after nearly two and a half years of observation of the use of gloves in Professor Fenger's operations, concluded that woven gloves have a place in dry operations, and that the outer surface of dry gloves usually remains sterile throughout the longest operations. He prefers cotton to silk gloves, but recommends above all the use of rubber gloves, because of their impermeability. Both the woven and rubber gloves are sterilized in any of the usual ways, except that he advises against boiling the rubber gloves in soda, or in carbolic acid solutions stronger than two per cent. A hundred and twenty-five bacteriological examinations were made, and his conclusions are that, in proportion to the work and responsibility of those engaged in the operation, there is a relative increase or diminution in the frequency of cultures from the inner side of the gloves. This is probably due to reinfection of the surface by bacteria brought from the sweat ducts, glands, and hair follicles by perspiration.

Gloves were infected in 66⅔ per cent of the cases, while the least active person, the nurse, handling sutures, ligatures, and sponges, had no cultures from the inner side of her gloves. A total of sixty-three cultures were made from the inside of the gloves of all participants, and there was infection in 28¼ per cent; while of the sixty-two cultures made from the outside only 9¾¼ per cent were infected, and the latter occurred with no more frequency in the case of the operator than with the assistants. Staphylococcus albus was the only microbe found. The writer reports but one case of accidental infection during the use of the gloves—a mild albus infection of an inguinal hernia. Stitch-hole abscesses are almost a thing of the past, and wound healing is more speedy and perfect than when the gloves are not used.

Buford suggests that in addition to the gloves the operator sterilize his hands in his own accustomed way, then sweat the hands and forearms for fifteen minutes by immersion in hot water or exposure to dry steam, a second hand sterilization and sweating, then a final hand sterilization. This has been

proven worthy of consideration by experiments of Dr. Leonard Freeman. Woven finger-cots should be worn by the operator over the glove fingers on each thumb, and one or more chosen fingers to facilitate in handling tissues, to prevent cutting by ligatures; and finally sterilized armlets of rubber or cloth should be used to cover the arms and enclose the glove gauntlets to prevent leakage of fluids from the gloves into the operative field and to prevent contact of gloves with neighboring forearms.

AORTIC ANEURISM.

The *Medical News* of January 27, 1900, tells us that at a recent meeting of the Section of Surgery of the New York Academy of Medicine Dr. John M. T. Finney, of Baltimore, read a paper on the treatment of this condition, which he thinks should be surgical. The Tufnel treatment has benefited some cases, but they are very rare. The cures that have been announced are even rarer, and we have not any assurance as to their persistence. For vessels of medium size it is questionable if any treatment except operation is justified. The Hunterian operation in these cases gives excellent results. As to the aneurism of the abdominal aorta, this is very different. Nine cases in which the abdominal aorta has been tied have all proved disastrous. A case in which Keen tied the abdominal aorta and in which the patient survived is reported. This case is a recent one, however, and the details are not substantiated. MacEwen's operation of needling the internal wall of the sac, so as to lead to the formation of an internal thrombus, sometimes gives good results, but it is slow in its operation and cannot always be relied upon.

Gelatin Injections.—The injections of gelatin suggested by the French surgeons have not proved as successful as was promised. The brilliant results have been obtained nowhere else. Dr. Futcher has experimented with the method at Johns Hopkins Hospital in nine cases. In six of them the treatment has been carried on for a sufficiently long time to give definite conclusions as to the value of the procedure. No positive cures have been obtained in any of the cases. In one there was diminution in size of the aneurism. In five cases the patients were subjectively better. The injection of gelatin did not add to the coagulability of the blood. This was demonstrated by careful tests. Despite Lancereaux's assurances that the injections produced no discomfort, they were usually accompanied by considerable pain and sometimes followed by fever. There was never any local suppuration, and only in one case was there a local reaction. The gelatin method does not cure, but it is of some value in certain cases. In conjunction with the wire method it is better than either one of them alone. Where it seems inadvisable to use electrolytic methods hereafter, it is advisable to combine these two procedures.

Coiled Wire and Electrolysis.—The most effective treatment for aneurism is undoubtedly the insertion of wire and the electric current. As to the wire that should be used, it has been found at Johns Hopkins that a silver alloy highly drawn is the best for this purpose. The alloy is composed of 75 parts of copper to 1000 parts of silver. When highly drawn this wire, unlike pure silver, retains considerable tendency to coil within the sac, and yet is more pliable than any other form of wire, so that there is much less danger of puncturing the sac. If anything causes the wire to become blocked, or it kinks, another needle may be inserted at some little distance from the first and wire passed through this. If there is a multilocular sac a series of wires may be passed. The direction of the wires should as far as possible be away from the neck of the sac and in the same direction as the incoming current of blood. The positive pole should be attached to the wire within the sac, not the negative pole. The negative pole causes the formation of a clot which breaks down easily.

Danger and Results.—Sepsis is the omnipresent danger in wiring an aneurism. The point of insertion of the needle should be rendered as aseptic as possible. There is some danger of the development of an additional aneurismal sac by a change in the direction of the blood-stream and the setting up of a current against a part of the sac which was not acted on before. The current should not be allowed to act through the needle itself. For the purpose of insulating the needle it has been found that a French lacquer acts very well. At times the wire passes out of the sac itself and causes complications by the formation of clots in the blood-stream which may give rise to thrombi in the general circulation or interfere directly with the heart action or with the valves. In some reported cases the impinging of the wire on a valve has caused death; in others

the interference with the valvular mechanism has led to syncope. It has been said that the presence of a distinct double diastolic and systolic sound shows that the sac has a small opening. Halsted, however, found on autopsy, in a case in which there had been a distinct and characteristic aneurismal bruit, that the opening was a large one, so that this diagnostic rule does not hold in all cases. The danger of perforating the sac has been exaggerated. As a matter of fact, when suitable wire is used it coils up and does not produce the slightest traumatism.

The reported results of the use of wire and electrolysis on large aneurisms certainly justify the continued employment of this method of treatment. At least twenty per cent of the reported cases have been cured. Dr. Stewart, of Philadelphia, wired one of his patients three times, and the patient felt better each time. Hare's case has continued well ever since the operation. In other recent cases persistent results have been at least as good. The great drawback, so far as statistical hopes are concerned, is that the cases which are wired are not selected ones, but are hopeless cases in which a fatal termination seems not far off unless something is done. As a matter of fact, wiring completely changes the aspect of some of the patients and makes them hopeful. One patient was a most pitiable picture. He could not lie down at all, but took whatever rest he could get sitting bolt upright, and there was a continued feeling of the most severe discomfort. At the present time this patient can lie down, and considers that he has been practically cured. In another case the right chest filled up frequently with fluid and required repeated tapping. The accumulation of fluid in the pleural cavity is now much less than it was, and tapping is not so frequently required.

THE VALUE OF IRON AND ARSENIC IN THE ANEMIA OF TUBERCULOSIS.

As a result of a very careful research made by MARTINET and published in *La Presse Médicale* of January 6, 1900, the conclusion is reached that these two drugs are of very great value for the purpose of combating the profound anemia found in many cases of subacute or chronic pulmonary tuberculosis.

While it is true that almost every patient suffering from this disease may benefit to some extent by small doses of arsenic, this drug is particularly valuable in those cases in which the anemia is profound and grave, and in which the tuberculous process is not active, and particularly when it is inclined to affect the lymphatic system.

When it is not considered wise to administer iron and arsenic simultaneously, these drugs may be given alternate weeks; or, in other instances, the arseniate of iron may be used, thereby combining both remedies in one. Martinet quotes Landrieux as having studied the effect of these remedies upon the tuberculosis patients, and having found it possible in the course of three weeks to increase the red cells from 2,800,000 to 3,750,000 in one case, and from 2,200,000 to 3,530,000 in another.

The study of the influence of these drugs on tissue waste shows that they exercise a favorable influence upon it.

The well known fact that arsenic is a very valuable drug to many patients suffering from pulmonary tuberculosis would make us feel the more inclined to follow Martinet's advice.

A REMEDY FOR SWEATING HANDS.

The *Journal de Médecine de Paris* of December 17, 1899, gives the following formula:

> Borax and salicylic acid, of each 4 drachms;
> Boric acid, 1 drachm.
> Glycerin and dilute alcohol, of each 2 ounces.
>
> Apply with friction three or four times a day.

THE EMPLOYMENT OF SUBCUTANEOUS INJECTIONS OF GELATIN IN HEMORRHAGIC SMALLPOX.

Boy-Teisser, of Marseilles (*La Presse Médicale*, Dec. 16, 1899), recommends in the treatment of hemorrhagic smallpox the subcutaneous injection of gelatin dissolved in normal salt solution:

> Gelatin, 18 grains;
> Salt, 18 grains;
> Water, 2 ounces.

As a result of such injections he claims that a larger number of patients recover, that the tendency to hemorrhage is greatly controlled, and that abscess is not apt to follow. Out of 121 subcutaneous injections in which large quantities of gelatin serum were administered, he never saw any evil results; in a large number of injections, however, he used large quantities of normal salt solution, amounting to as much as a pint or a quart, and probably this thorough washing of the tissues and flushing of the kidneys had quite as much to do with the good results obtained as had the gelatin.

PRESCRIPTION FOR CONSTIPATION IN WOMEN.

In the *Journal de Médecine de Paris* of December 17, 1899, LUTAUD recommends the following:

Podophyllin, 50 grains;
Euonymin, 5 grains;
Extract of belladonna, 10 grains;
Extract of hamamelis, 20 grains;
Soap, 30 grains.

Make into 50 pills and give one or two after the evening meal.

CONSTANT MEDICAL SUPERVISION—SANATORIUM TREATMENT AT HOME FOR PATIENTS SUFFERING FROM TUBERCULOSIS.

KNOPF, whose excellent prize essay we reviewed not many months ago in the GAZETTE, has written an article in the *Medical Record* of January 27, 1900, in which he expresses the belief that the good results in sanatoria are to be ascribed to the constant medical supervision of the patient by the physician in charge, or his assistants, who direct all the details of the hygienic, dietetic, and symptomatic treatment. We must do the same if we wish to institute a sanatorium at home. But there are a few points in the educational treatment of consumptives in which the family physician has the advantage over the sanatorium physician. The former can make his authority felt whenever there is a question of marriage. He admits that the families will not always listen to such advice; still he claims that in many instances marriage between tuberculous individuals could be prevented by an energetic protest on the part of the family physician. Another important issue, which will present itself more frequently to the family physician than to any one else, is the question of prevention of conception when either one of the married partners suffers from pulmonary tuberculosis. Knopf has no hesitation in declaring publicly his position in this matter. To cut short a conception in a tuberculous mother is useless; she has a better chance of getting well if left alone, and if a thorough dietetic and hygienic treatment is immediately instituted and prolonged for at least a year after confinement. Of course, it goes without saying that the tuberculous mother is not to nurse her child. Thus through a very judicious management two lives have a chance to be spared, while through abortive proceedings both mother and child would most likely succumb. On the other hand, when it comes to the prevention of conception in a tuberculous woman, or from a tuberculous man, Knopf believes it is the sacred duty of the family physician to teach these people legitimate means that they may not bring into life a being tainted with a predisposition to this disease. Furthermore, there is no doubt that the pregnant state in a tuberculous woman, while it may temporarily arrest the disease, causes in the majority of cases a more rapid decline after confinement. In view of our present knowledge of tuberculosis he believes that to teach a tuberculous man or woman how to prevent conception is not a sin before either God or man.

The symptomatic treatment of pulmonary tuberculosis must be the same everywhere, but Knopf desires to say one more word in regard to the prophylactic treatment, which he has also said on previous occasions, but which he wishes to repeat again and again.

The treatment of tuberculosis in the private home by the family physician should be prophylactic in the broadest sense of the word. It is the family physician who will see the incipient cases first; it is he who will discover a predisposition to phthisis when a wise and judicious treatment will save the patient. The intimate relation which exists between the family physician and all the members of the family gives him here again the superiority over the sanatorium physician. The latter can help only the patient placed under his care, while the family physician can at the same time prevent the breaking out of tuberculosis among the other members of the family.

After all that has been said the sanatorium treatment is feasible even in the average home, provided the patient's social and financial conditions permit the carrying out of a rigorous hygienic and dietetic regimen under the careful guidance of the family physician. But with the vast majority of tuberculous patients, and this majority constitutes the consumptive poor, to carry out successfully the precepts of modern phthisio-therapy without special institutions supported by the state or municipality, or private philanthropy, is utterly impossible.

Knopf closes with a fervent plea for a decided action on the part of society in the matter of creation of public sanatoria—that is to say, institutions for that class of sufferers who deserve the greatest sympathy, and through whose hospitalization the public health will gain most and the commonwealth be morally and financially benefited.

A PRESCRIPTION FOR SEBORRHEIC ECZEMA.

The following recipe is given in the *Journal de Médecine de Paris* of December 17, 1899:

> Chloroform and glycerin, of each 2 ounces;
> Chrysarobin, 30 grains;
> Ichthyol, 30 grains;
> Salicylic acid, 30 grains.

This mixture is to be applied to the part affected every day or every other day, to be followed by an application of olive oil or cold cream to prevent undue irritation of the skin. Care must be taken that the chrysarobin does not irritate the skin too greatly. If it does the quantity must be decreased.

Another recipe which is said to be of value for dry, scaly skin diseases is the following:

> Ichthyol, 1–2 grains;
> Chrysarobin, 1–2 grains;
> Vaselin, 1½ ounces.

To this is to be added a little extract of violet to cover the odor of the ichthyol.

POSSIBILITIES OF CURE IN DIABETES.

Editorially the *Medical News* of February 17, 1900, tells us that the modern treatment of diabetes mellitus is encouraging. Instead of the simple absolute withdrawal of all sugar-containing articles from the dietary, there is the rational selection of a food programme to which it is possible to persuade a patient to submit without the insistence so necessary under the old régime. Careful study of the amount of glycosuria under a diet containing a definite amount of carbohydrates shows just to what degree the patient's faculty for the absorption of sugar is disturbed. Slightly less than the amount of starchy foods that can be utilized by the system is then allowed. From time to time several days to a week of absolute abstention from all substances containing sugar is insisted on. For several days twice a year a rather liberal diet of carbohydrates is allowed and the systemic metabolism, as far as it regards sugar, carefully estimated once more. Where the dietary regulations have been carefully followed, it will often be found distinctly improved in the interval, the system having become able in the meanwhile to dispose effectively of more sugar than before the treatment was begun.

Where improvement is noticed patients are very much encouraged to go on with the careful observation of the regulations. Before the possibility of the restoration of the metabolic faculty for sugar was realized, a lifetime of almost hopeless self-denial seemed the price of health. Now there is a definite term and an encouraging progress, the steps of which can be demonstrated. Any one who knows how liable diabetic patients are to be disheartened at the constant sacrifices required by their ailment will appreciate the importance of this new aspect of the therapeutics of the disease. The mental state, as is well known, always has great influence on the course of a diabetes. To substitute, then, for the state of hopelessness so apt to be engendered by constant denial a reasonable prospect of improvement and eventual cure is of itself a most important element in the successful therapy of the disease. The hope inspired in patients that they will ultimately recover their faculty for the metabolism of sugar is not merely illusory, nor is its justification to be found only in its suggestive influence. Such careful clinicians and thorough specialists on the subject as Von Noorden and Naunyn have reported not a few cases in which patients regained their normal metabolic relation to sugar.

The secret of many of these cures, besides the careful regulation of the amount of starches and sugars consumed, lies in the judicious use of the fats. In modern life there has been a departure from old habits in the use of fats in the diet and a substitution of the starchy carbohydrates that is a source of a good many inconveniences. A certain distaste for fats is acquired by many people, and an important article of food neglected. Diabetics must be first of all taught to use fats in abundance. They are the only substances that can succeed in stilling the craving for the starches and sugars and can properly replace them. As the result of the insistence on this important principle and the thoroughly rational treatment of the question of limitation, not negation, of starchy foods, a very promising vista is opening up in a field of therapeutics that has been up to the present time a source of a good deal of dissatisfaction to patient and physician.

REPLY TO A STANDARDIZATION CRITIC.

In the early days of any reform movement, however well founded in reason and necessity it may be, there is always great opposition to overcome. And later on, when the movement has finally resulted in changes of real value to society, there are yet to be found

those who disagree with the majority and who either think the changes unnecessary or the success temporary. When first it was realized that the active principles of drugs were present in different lots of those drugs in greatly varying percentages, so much so that one lot of finished preparations was often twice or three times as potent as another made in exactly the same way; and when to remove this element of danger and indefiniteness "standardization" was suggested, the suggestion, though by many recognized as rational and necessary, was greeted by others with doubt and opposition. Now, however, a decade or two later, the standardization of galenicals has proved so valuable in practice that scarce ever is a voice or a pen arrayed against it. Nearly every one is agreed that in the coming revision of the Pharmacopœia definite standards should be laid down for the preparations of all of those important drugs for which determinative and reasonably simple processes of assay have been elaborated. This is exactly the position taken by Dr. Rice, the chairman of the revision committee and the leading authority on pharmacopœial affairs, whose recent remarks on this and allied questions were discussed by us last month; and it is the position taken on every side by pharmacist, physician, and chemist.

Even now, however, after standardization has apparently proved its value, and after nearly every one is agreed that it should be extended in its application so far as practicable, there are those who discredit the evidence and who take their stand in opposition to the great majority. A recent instance of this is found in an article on the "limitations" of standardization in the *Alumni Report* for December, written by the editor, Mr. Joseph England. In this article Mr. England gives several reasons why, in his opinion, the standardization of galenicals really has little value. These reasons, we find, are four in number; and we propose to take each one up in turn and examine it.

1. In the course of his article Mr. England says that in actual medical practice standardized preparations have little value over those unstandardized for the reason that the physician in exhibiting a drug "gives it in small and gradually increasing doses until he gets full physiological effects, and then he stops." So long as the physician is guided entirely by the resistance of his patient to the drug, asks Mr. England, what does the strength of the drug matter? The conclusive answer is that in the great majority of cases the physician is not so guided. For, as a matter of fact, it is only rarely that a physician "pushes" a drug until he gets the "full physiological effects," as when, for instance, he gives arsenic in certain skin diseases, strychnine in tuberculosis, or potassium iodide in syphilitic lesions. In the great majority of instances, on the contrary, the physician desires, not "full physiological effects" of a drug, which indeed often border on toxemia, but the therapeutic effects; to this end he prescribes a drug in the ordinary accepted dose. And in giving this dose, or perchance, in theoretically suiting the dose to the age, sex, and condition of his patient, he wants a preparation of definite strength and unvarying potency—a preparation which will yield those results that he desires to produce —a preparation which can be depended upon. Particularly is this so when the physician is confronted with a sudden attack of heart failure in the course of some acute disease, such as typhoid fever, for instance; in such a case he must have prompt, effective, and safe results if he would save his patient. It is then a matter of extreme importance to him whether or not a preparation is of definite and uniform potency; and it is of only less importance to him at nearly all other times.

2. Mr. England thinks that, abstractly, standardization is also "limited" in value because the content of so-called "active principle" in a drug, which it is the sole purpose of standardization to make uniform, does not determine the real value of the drug. He advances a theory that the alkaloid of a drug simply produces cell irritability (catabolism), while the other constituents probably influence cell nutrition (anabolism). He conceives cell nutrition to be as important a need of drug medication as cell irritability, if not more important, and therefore deduces the conclusion that a preparation which has been made to contain a definite proportion of alkaloid has not, after all, been made to contain a definite proportion of those constituents in the drug which are perhaps of greatest value. This speculation, though rather ingenious, lacks, we believe, positive evidence to sustain it, and moreover is not consistent. Even if cell nutrition were the chief function of drug medication (which we do not admit), how much nutriment would be contained in one or two minims of a powerful extract like belladonna? Moreover, why depend upon drugs to furnish the cells with nutriment when foods

especially adapted to that end can be given in sufficient quantities? Though cell nutrition is undoubtedly improved by some drugs, reason and experience both indicate that the main function of drugs is to produce cell irritability, in contradistinction to the main function of foods. If this important influence upon cell irritability is made comparatively definite by a uniform content of alkaloid, alkaloids, or other active principles, it may be safely depended upon that there will be present sufficient of the subsidiary plant bodies to modify the action of the main body and to produce the desired incidental effect upon cell nutrition. That this is so, that standardized preparations, besides giving the assurance of comparatively definite and uniform physiological activity, produce those other and collateral influences which are expected of them—in short, that they are satisfactory from every point of view—has been indisputably demonstrated by ten or fifteen years of clinical experience. And an ounce of experience outbalances a ton of speculation.

3. Leaving the question of the abstract value of standardization, Mr. England asserts that this value is considerably lessened by the fact that different manufacturers of galenicals often have different alkaloidal standards for the same drug, and, though the same standard, different assay processes, which results in more or less variability of the finished products. That this variability exists is probably more or less true, but it is not great in degree, and, moreover, forms no valid objection to standardization. Perfection is a matter of evolution; it cannot be attained in a single decade. Manufacturers are constantly improving their processes and getting nearer together in both process and standard. Besides, there is every reason to suppose, now that satisfactory and effective processes of assay have been evolved, that definite standards and processes will be laid down for most of the important drugs in the coming revision of the Pharmacopœia, as they were laid down in the last revision for opium, nux vomica, and cinchona.

4. Mr. England asserts that the standardization of galenicals is nullified by the practice, common among manufacturers, of standardizing their preparations and then putting them aside to age, finally decanting "the clear supernatant solution from the principles that have precipitated . . . and selling it without reassaying." "In fact," says Mr. England, "such products may not then be standardized, because unknown quantities of alkaloids may have been removed from them after they have been standardized." This deduction will not bear scrutiny. Manufacturers do set their fluid extracts aside to age and to "settle," but almost never does the settled matter contain more than a mere insignificant trace of alkaloid. It is made up wholly of such inactive plant constituents as pectin, starch, and cellulose. One manufacturer assures us that he has made it a custom frequently to examine this precipitated matter, and occasionally has found it to contain the active principle in quite appreciable quantities, but that a correction in the menstruum and process of manufacture has always resulted in preventing such deterioration.

By way of recapitulation we would say, then, that in general it is most important indeed to have preparations of uniform strength and virtue in order that medication may be made safe, accurate, and effective; secondly, that this necessary uniformity of strength and virtue is most assuredly secured by standardization; thirdly, that the value of this standardization is only slightly lessened by the present small differences of standard and process between the different manufacturers, and that even these small differences will be almost entirely corrected when the coming revision of the Pharmacopœia lays down definite standards to which all must adhere; and fourthly, that fluid extracts once made of uniform strength and virtue do not lose that strength and virtue by the custom of manufacturers to put aside their fluid extracts until they have "settled," for experience and examination have shown that the settled matter is wholly inert and valueless.—*Bulletin of Pharmacy*, February, 1900.

VOMITING IN DIPHTHERIA.

In the *Clinical Journal* of January 31, 1900, ROLLESTON tells us that the treatment of the vomiting depends largely on the nursing of the patient, and in nursing we include careful and judicious feeding.

Of course, a very important part of the treatment is to avoid giving rise to vomiting, and as this may be brought on if food is given by the mouth, the patients are usually fed by the rectum. There are, however, objections to rectal feeding. One of them is that after about a fortnight, or before, the rectum begins to get irritable, and the enemata may be ejected before there has

been time to allow sufficient absorption to take place; so the child begins to starve. This, added to the constant vomiting, makes the condition of the patient very grave. Rectal feeding, therefore, should not be persisted in too long, and a little food should be given by the mouth as soon as possible. In the case of a boy who recovered this was done; his likes and dislikes regarding his food were humored, and he kept his food down. He was a hysterical, nervous boy, and it was not easy to get him to retain his food. But perhaps this was helped by a morphine draught, and by the injection of morphine under the skin. At any rate the boy began to improve directly he was able to keep food on the stomach. Before that he had wasted very much, and looked as if he was going to die of starvation.

It has been shown by experiment that if a dog has tracheotomy done, or if one of the laryngeal tubes introduced by O'Dwyer be passed through the upper opening of the larynx, so that the rima glottidis cannot be closed, the dog is unable to vomit. This has been shown satisfactorily in a dog that had been intubated, and then injected with apomorphine. The dog made tremendous exertions to be sick, but was not able to do so; immediately the tube was removed, however, violent vomiting followed. It was thought that this would be the case in a human subject, and the performance of tracheotomy in desperate cases of vomiting was recommended by Dr. Green, of Minnesota. Inquiry was made of the sister in the diphtheria ward some months ago as to whether tracheotomized patients ever vomited. At the time she thought they did not, but after we spoke to her about it she specially watched the cases with regard to this point, and in a little while she was able to give the notes of three tracheotomy patients who had vomited, and in whom there was no suspicion of any blocking of the tube; in one of the cases death was due to a considerable extent to the vomiting. So that the principle on which this desperate form of treatment is based, though it is all right for dogs, does not seem to hold for men, inasmuch as tracheotomy or intubation does not seem to prevent vomiting in the human being. This is a point which it is well to bear in mind. When one sees everything else failing, one is inclined to give a patient the benefit of the last straw; but it is important to know whether the last straw will bear something. It is possible that if tracheotomy had been performed on the boy he might still have gone on being sick, and that he might have suffered from the tracheotomy, for as a result of it he would have been exposed to the danger of getting bronchopneumonia, or bronchitis.

Another point is the question of giving alcoholic stimulants to these patients. It is one which is rather difficult to decide. In cases where cardiac failure is imminent, one is, of course, impelled to give alcohol, in order to tide over the immediate danger. But the nerves are probably in a condition of incipient degeneration, and alcohol being a nerve poison, its administration might hasten or cause further degeneration. We should be inclined to content ourselves with stimulating such cases by hypodermic injections of strychnine, and to withhold alcohol, or give it in very small quantities.

With regard to drugs for the vomiting itself, the hypodermic injection of one-fortieth to one-twentieth of a grain of morphine is a most valuable remedy. If there is an inflammatory condition of the stomach, it is only reasonable to believe that it may be given by the mouth, and by its local action lead to a good result. Perhaps it produces rather more effect if given by the mouth than if it is given underneath the skin. But we must remember that even when morphine is injected underneath the skin a certain quantity of it circulates round and is excreted in the stomach. It is important to bear in mind that in cases of poisoning by hypodermic injection of large quantities of morphine, permanganate of potassium should be given by the mouth, even though the poison was administered under the skin, because the stomach excretes into its cavity a certain amount of the morphine which is circulating through the body.

Another drug which is beneficial given hypodermically is strychnine. It is given, not for the vomiting, but to keep the heart in good working condition. Two or even three minims of liquor strychninæ, given under the skin twice a day, may be administered with this end in view, for patients do not die from the vomiting so much as from the heart collapse; and if the heart is kept in good condition and cardiac failure prevented, recovery may result.

A third drug useful in those cases where respiration begins to fail, and where the diaphragm is paralyzed, is atropine. It is administered hypodermically. The use of belladonna in cases of diphtheritic paralysis is to keep the respiratory system going.

THE RHEUMATIC HEART, WITH ESPECIAL REFERENCE TO TREATMENT.

Under this interesting title Dr. SANSOM speaks in the *Clinical Journal* of January 31, 1900, of this important theme. He says to his readers: "You do not need to give salicylates; there is nothing of discomfort that the salicylates would do good for. What about increasing the force of the circulation and of the heart? You say, what about digitalis? This man had some digitalis, tincture of digitalis 15 minims and sodium iodide 5 grains. The pulse-rate was increased from 44 to 72, was much more regular, the rhonchi cleared up, and all the lung signs have gone. After the pulse-rate got up to 72 it went down again to 44, and then we stopped the digitalis and gave the patient belladonna. Now concerning the treatment of these cases by digitalis, we have only two words to say—use judgment. Always remember what you want the digitalis for. Digitalis is to increase the force of the heart muscle to do the work properly. In cases of mitral regurgitation where the right heart is enlarged, *pari passu*, with enlargement of the left heart, digitalis does much good, and in cases carefully selected you may keep a patient on digitalis. But you have always got to watch its effects, because it is possible that by and by it may cease its good effects and do harm. You know by experience that cases of mitral insufficiency with dropsy may begin to pass more water and begin to breathe better, the heart gets much more in order, things are put right, and the patient goes on admirably on digitalis. But in a few, after the urine has been increased abundantly and things go on well, you find the patients begin to feel not quite so well, and the urine begins to decrease. In that case the digitalis has not acted alone on the heart; it acts on the vessels also, and contracts them too much. The digitalis may cause vomiting in some cases, stoppage of urine instead of increased flow in others, and in a few cases irregularity of the heart instead of continued regularity; in some cases undue slowing of the pulse instead of its maintaining its proper rhythm. So it may fail sometimes in mitral regurgitation, but a great deal more often in these slow-going cases of mitral obstruction. Why is that? Digitalis increases the force of action of the muscle of both ventricles. But in mitral stenosis the left ventricle does not want it; there is no difficulty for the left ventricle to empty itself into the aorta. In extreme mitral stenosis, for example, there is no regurgitation at all; in some cases there is some regurgitation into the left auricle, but it is only exceedingly little; the difficulty is to get blood into the left ventricle. There is not a pumping back into the left auricle, as in mitral regurgitation; there is not enlargement of the left ventricle, as there is in mitral regurgitation. There is no dilatation, and there is no hypertrophy. Then you act disproportionately if you give digitalis for any length of time—you act disproportionately upon the right ventricle. The more you get the right ventricle to work, the more you may drive the blood into the venous circulation, including the liver; therefore, it is not likely to do so much good. There is no doubt that for a limited time it does very much good. Five- to ten-minim doses of the tincture, or drachm doses of the infusion, or grain doses of the leaves three times a day, do good for a limited time. When you find it does not do very much good you have to wait. In some cases it does not do good at all. The great difficulty is that the right ventricle is overdone. You may do a great deal then by letting out a little of the distention. Bleed from a vein and learn to bleed; you may save lives entirely by bleeding properly and at the right time. Some people will not hear of being bled, but they do not mind a few leeches. Dry cupping you can do, but wet cupping makes people flee in horror. Do not be afraid of popular prejudices. When you have thus relieved the tension in the right heart digitalis will perhaps do good. But you can give another cardiac tonic, namely, convallaria and caffeine, but particularly convallaria. When the action of the heart is slow you can give another heart tonic, namely, belladonna.

"Therefore, to sum up very briefly, there is the first class of cases, in which there is undoubted rheumatic fever and evidence of mitral regurgitation, and where your first point of treatment is to keep down the rheumatism and make the patient comfortable by treating him with salicylates or salicin. The second thing to do is to keep up the force of the heart judiciously, but not without due circumspection — if necessary with digitalis, and then give alkalies, because they do good. In the second class of cases you have no chance of treating the rheumatism. Salicylates are not required; you have no chance of using them for rheumatic phenomena, or very rarely; and then you have to improve the circulation in all the ways you can; you may

improve it by rest and quiet, or by digitalis, or by any of the heart tonics judiciously applied.

"There is another thing to be said to you very briefly. In mitral obstruction you have got a gradual narrowing of the mitral orifice produced without any obvious symptoms, and slowly going on through the course of years. Now, you will want to know, or your patients will, what about mechanical treatment, what about exercise, baths, and bathing? Let us look at the years which are gone by; what might happen? Supposing such a subject were 'coddled up,' the contraction would get more and more pronounced, the circulation would become more and more congested, and the patient would become more and more languid and feeble. Now, supposing we use mechanical means for increasing the driving power of the right ventricle, we do a good thing. We can do that by massage; we can help the venous circulation by massage; we can also do it by exercises. It is not a good thing for a patient like that to be taught to 'cave in.' If there is anything acute you must give the patient a rest for a time; then let him have exercise gradually and carefully, and before active exercise is commenced use massage. Baths are very good indeed. Perhaps we have heard too much about systematic bathing, but it is a good thing. Certainly unsystematic coddling is a bad thing. If you put the heart to rest long, you know that the heart muscle will get feeble. If we took a blacksmith's arm and told him not to use the hammer, but instead tied it up tightly to his chest, it would waste. So the heart will get feeble if you let it rest too much. Supposing we were to tell you to have a good hot bath three times every day, what would happen? We think you would feel limp; you would bleed into your own skin and subcutaneous tissue, and the heart would be weakened, because there would be dilatation of the vessels. But if you were afterwards told to take a cold sponging, that would tend to make the heart act quicker and better, and in that case the heart would be toned up. That is where the benefit of baths comes in; the warm bath should be followed by a cold sponging to tone the heart muscle up. Exercises should be graduated. Remember that this slow-going insidious heart trouble must be met by gradual means for getting the system over its difficulties, and bringing it near to perfect health. It cannot be quite perfect health, because there must be perfection of structure for perfection of health; but the best substitute for perfect health should be aimed at, namely, a well-compensated heart, and that is all you can get. But by these means judiciously carried out, the patient may be placed in fair health for years."

SLEEPLESSNESS.

Sir WILLIAM BROADBENT writes in *The Lancet* of January 27, 1900, on this topic. He describes the forms of sleeplessness and then its treatment: The treatment of sleeplessness due to flatulence is, of course, that of the dyspepsia. The simplest of the remedies is a tumblerful of hot water at bedtime, and it is usually effectual. The stomach is stimulated to contract, much of the gas in it at the time is expelled, and any fermenting contents are swept on into the small intestine, where the antiseptic bile checks further fermentation and where flatulence gives rise to less disturbance. The hot water should be taken before undressing, so that it may have time to clear out the stomach and expel the gas before the patient lies down. Should hot water not be sufficient sal volatile and carbonate of soda may be taken before it, or an alkaline carminative draught may be given — carbonate and sulphocarbolate of soda with aromatic spirits of ammonia, compound tincture of chloroform, or peppermint or camphor water, and sometimes bromide of sodium or ammonium may be added with advantage for a time. Friction over the epigastrium or between the shoulders may help to disperse the flatulence. We do not think it is well to allow even so simple and harmless a matter as a nightly dose of hot water to grow into a habit. As a rule it should not be continued for more than a week at a time, as the response of the stomach becomes imperfect. It has seemed that an alkaline draught can be taken longer without losing its effect. He knows several patients who wash out their own stomachs at bedtime whenever they have sensations which lead them to apprehend a bad night.

Some individual causes of sleeplessness must be considered. Tea and coffee are looked upon as powerful agents in the prevention of sleep, and there are no doubt many who have found a cup of strong tea or coffee an excellent preparation for an evening's work. Certain kinds of tea and really good coffee do undoubtedly act as stimulants to the brain; they help the tired nurse to keep awake and fresh, and keep sleep at bay for

the student who is working far into the night. They may, indeed, produce a condition of intense wakefulness. When, however, it is stated that a cup of tea in the afternoon will keep a person awake all night, Broadbent doubts very much whether it is the tea, as such, which is responsible for the result. Imagination often plays a very influential part in the effect. Let such a person be confidently assured that pure China tea, brewed for not more than two minutes, is innocent of such evil properties, and he or she will often take it with impunity whether it conforms exactly to the description or not. But afternoon tea is a very common cause of flatulent dyspepsia, and in this way may be responsible as the cause of protracted sleeplessness. So with the after-dinner cup of black coffee; it is often the dinner and not the coffee which disturbs the night's rest.

Influenza has familiarized us with sleeplessness of a most obstinate character. There is always asthenia, cardiovascular and nervous, which must be borne in mind in the treatment. With the general effect on the nervous system there may be complications which contribute seriously to the prevention of sleep and may even interfere with the action of powerful opiates or sedatives. Among these is acute dilatation of the stomach, a not uncommon incident of an attack of influenza. It was present in the worst case of post-influenzal sleeplessness that the author ever saw, in which there was not a wink of sleep for four days and nights. Sleeplessness following influenza must be treated as an acute affection, and unless there is speedy improvement under such tonics as arsenic or phosphorus, strychnine and quinine, together with measures for the relief of functional derangements, opiates may be given without hesitation, and we think it better to have recourse at once to combinations of opium or morphine and hyoscyamus with carminatives than to try sulphonal, or trional, or chloral and bromides. In case of need morphine may be given hypodermically, and it usually adds greatly to the efficiency to combine it with strychnine as well as atropine. The immediate effect of large doses of alcohol is torpor. A result of long-continued alcoholic excess is sleeplessness culminating in delirium tremens. The remedy here is total abstinence with considerable doses of strychnine or nux vomica and perhaps digitalis. At the same time the liver and stomach disorders resulting from the alcohol will demand attention, as they may keep up the sleeplessness, and are indeed frequently its main cause.

Broadbent does not know whether it is worth while mentioning some of the popular remedies for sleeplessness. Among them is the hop pillow, which certainly sometimes seems to soothe. There is, again, the saffron bag applied to the pit of the stomach, immortalized by Bulwer Lytton in The Caxtons. Gently smoothing the hair is undoubtedly efficacious in many cases, as is also, but less frequently, sponging the burning palms. Dipping the face in cold water is one of the expedients of the worker late at night; some will sponge the entire head. Then there are the different ways in which people try to hypnotize themselves by watching and counting the invisible breath, slowly counting imaginary sheep as they pass through an imaginary gate, and the like.

He has not ventured on the large subject of the employment of hypnotism. That it has legitimate uses in inducing sleep he has no doubt. It has not been his good fortune to meet with a case where it has overcome the morphine habit or rescued the victim of chloral or sulphonal.

ANTITYPHOID INOCULATIONS.

The paper which was published in *The Lancet* of January 20, "On the Results which Have Been Obtained by the Antityphoid Inoculations," by Prof. A. E. Wright, of the Army Medical School, Netley, is certain to have been read with an unusual amount of interest, more especially as this prophylactic measure is at present being submitted to the most critical trial amongst the troops on active service in South Africa. We trust, by the way, that the officers in charge of the men will find time amongst their many duties to make records of cases of typhoid fever occurring amongst inoculated and uninoculated men respectively, together with the mortality and severity of the cases. Such observations will be of the first value.

On September 19, 1896, Professor Wright, in a paper in *The Lancet* dealing with the relation of serous hemorrhage to certain conditions of defective coagulability of the blood, published his first experiments in what he termed "typhoid vaccination." On January 30, 1897, a paper appeared in the *British Medical Journal* by Professor Wright and Surgeon-Major D. Semple, entitled "Remarks on Vaccination Against Typhoid

Fever," in which it was pointed out that the object of all vaccination processes is, first, to achieve a degree of immunity which shall be equal to, or greater than, that which accrues to a patient who undergoes and recovers from an actual attack of the disease; and secondly, to achieve that immunity without any risk to life or health. The first of these objects, the authors proceeded to state, can, as far as is known, only be satisfactorily accomplished by inoculating the patient with the microorganisms (or the products of the microorganisms) of the particular disease. The second object can be carried out in several ways. The patient may be inoculated with microorganisms which have lost their virulence for man by being passed through a whole series of appropriately chosen animals; or, as in the Pasteurian method of vaccinating against anthrax, artificially attenuated microorganisms may be employed in the inoculations; or, lastly, the patient may be inoculated with measured quantities of dead, but still poisonous, microorganisms. The advantages claimed for the last named method are that there is absolutely no risk of producing the actual disease —in the case we are considering, typhoid fever—by the inoculations; secondly, that the vaccines may be handled without incurring any risk of disseminating the germs of the disease—a matter of the greatest importance when it is considered under what conditions the inoculations of troops may have to take place; and thirdly, that dead vaccines are probably less subject to undergo alterations in their strength than living vaccines.

With reference to the second of the above objects of vaccination—namely, that there should be no risk to life or health—we may merely say that a considerable experience has shown that but little inconvenience results from antityphoid inoculation. The men inoculated suffer slight pain and tenderness at the site of the inoculation, and there is fever and general malaise lasting from a few hours to two or three days, rarely longer, when all of the symptoms subside.

The points which we will now consider, however, are the results which have been obtained, as shown by Professor Wright's last contribution. We fear that we cannot speak in enthusiastic terms of the statistics he has been able to quote, as a much larger number of cases will be required before any definite conclusion can be arrived at. But at the same time the results as shown in his table are distinctly encouraging, quite sufficiently so to justify the medical officers in strongly advising officers and men to submit to the operation, and, as we believe has been often the case, in setting the example by themselves submitting to be vaccinated. The actual figures show that altogether 11,295 men were under observation, of whom 2835 had been inoculated and 8460 had not. The percentage of cases of typhoid fever amongst the uninoculated was 2.5 and amongst the inoculated 0.95, a difference sufficiently great to warrant further extensive trials taking place. With regard to the mortality, the results are not so marked. Amongst the uninoculated the percentage of deaths was 0.34, and amongst the inoculated 0.2. We agree therefore with Professor Wright that a certain measure of protection seems to have been conferred by the inoculation of quantities of dead typhoid culture, and when his remarks on the conditions under which the inoculations were carried out are considered this conviction becomes intensified. For instance, Professor Wright points out that the inoculated men were, taken as a whole, men who were much more likely to contract typhoid fever than the uninoculated men, for the inoculated men consisted to a large, and sometimes to a preponderating, extent of young men who had only recently come out to India, while the uninoculated consisted mainly of older and more seasoned men—in other words, of less susceptible individuals.

Read in the light of the above facts it is suggested that many of the results appear in a more favorable aspect than that which they present on a mere inspection of the figures given in the table. Professor Wright further urges that it must be borne in mind in connection with certain of the figures which he gives that the inoculations were sometimes undertaken in the actual presence of a typhoid fever epidemic. In conformity with this fact it was only to be expected that some of the inoculated would prove to have been incubating typhoid fever at the time of the inoculation, and in certain instances this turned out to be so. These cases have not been reckoned in the general summary of cases where the disease is known to have been contracted subsequently to inoculation. Professor Wright points out that the results given in the table apply to men as distinguished from officers; as to the latter, no accurate statistical materials are available. It is satisfactory to learn, however, that among a number of inoculated officers who, count-

ing only the subalterns, must now amount to several hundreds, there have been, so far as Professor Wright has been able to ascertain, only five cases of enteric fever.

It is an old but unfortunately only too true maxim that in war many more men succumb to disease than to bullets. Typhoid fever has hitherto been the most prominent factor in increasing the death roll of British soldiers in peace or war, and if a prophylactic measure can be found that even in some way tends to diminish the risk of infection without damaging the general health of the inoculated it should undoubtedly be employed as largely as possible. The results so far cannot be said to be more than encouraging, hence the importance of careful observation in the present campaign is very great. Typhoid fever is so prevalent in many of our foreign possessions where large numbers of British troops have to be stationed that if the antityphoid inoculations should prove to be of use the discovery would be one of the most valuable that has been made during the present century.

In order that the immunity conferred by the inoculation should be of full value to those seeking protection, it is necessary that the effects should last for a considerable period. On this point we have as yet little information. Mr. A. G. R. Foulerton had the opportunity of examining the blood of nine people who had been vaccinated two years previously at the Kent County Asylum at Barming Heath. It was found that in four cases out of nine a definite agglutinative reaction was obtained after an interval of two years. These numbers are small, but they would tend to show that the benefits obtained are prolonged for some time. Further investigations must be made before definite results can be arrived at.—*The Lancet*, Jan. 27, 1900.

THYROID EXTRACT IN THE TREATMENT OF TUBERCULOSIS.

Prof. EDWIN KLEBS reports in the *Berliner Klinische Wochenschrift* of December 11, 1899, the results of trials and studies made by him on the above subject, as he announced at the meeting of the Tuberculosis Commission at Munich. He used the juice of the thyroid as obtained by pressure and administered it to the subjects of phthisis in an early stage, all of whom were markedly suffering from gastric symptoms (achylia gastrica), while the changes in the lungs were but slight. The drug was not given empirically or in haphazard manner, but in accordance with the results of experiments carefully carried out previously on animals, in which Klebs had found that when the thyroid gland had been removed the same gastric conditions resulted as was the case in the patients alluded to above. It must also be noted that these patients were found to present a noticeable atrophy of the thyroid gland. The gastric juice of dogs experimented on after ablation of half of the thyroid gland and simultaneously subjected to injections of tuberculin was found to be almost entirely devoid of hydrochloric acid and of pepsin, while the intact half of the dogs' thyroid was found to be undergoing atrophy with a total disappearance of its colloid substance. It thus appeared as if the action of tuberculin was inimical to the thyroid function, and that as a net result there supervened after a while the gastric conditions referred to above.

Concluding from these experiments that the feeding of tuberculous patients who suffered from severe achylia gastrica with fresh thyroid secretion might have a beneficial effect, the theory was carried out into practice, with the result that much benefit was obtained by this method of treatment. Klebs records the clinical history of two phthisical patients thus treated, and points out that in both cases a marked improvement of bodily condition and an increase of weight followed the treatment. Other improvements in respiratory capacity and in respiration generally are also recorded, and a marked increase in appetite, which before had been very feeble.—*The Lancet*, Jan. 27, 1900.

DIETETICS OF BREAD AND BUTTER.

Under this practical title HEMMETER tells us in the *Maryland Medical Journal* for February, 1900, that no one can tell how long bread and butter have been used as a dietetic combination, but it is probable that the combination is very nearly as old as the use of bread alone, because butter was made from milk as early and by the same people which have been mentioned in the early preparation of bread from wheat. In his excellent physiological work, Die Arbeit der Verdauungsdrüsen, Prof. J. P. Pawlow has shown that fats inhibit and sometimes may arrest the secretion of HCl in the stomach, but at the same time stimulate the secretion of

the pancreas. Here the most modern physiology has given an instructive explanation of the instinct by which the human race has for ages been led to associate bread and butter. We all know that fats cannot be digested very well in an acid medium. It is also known that carbohydrates, such as bread, which contains on an average between fifty and sixty per cent of starchy matter, cannot be digested very well in acid medium. Fatty foods are difficult to digest, and those afflicted with weak stomachs must avoid them. If fat is present in the gastric chyme to any considerable extent, it arrests the secretion of acid gastric juice in its own interest, and in that way impedes the digestion of the albuminous or proteid bodies. For that reason the combination of fatty and albuminous food is difficult of digestion, and only agrees with people who have a strong stomach and an intense appetite, the explanation being that the albuminous food requires an acid medium for its solution in the stomach, and actually stimulates the acid secretion (Hemmeter: Disease of the Stomach, second edition, article on "Hyperacidity"), whereas the fats require an alkaline medium, and depress the acid secretion. The combination of bread and butter is not difficult of digestion, because the bread contains comparatively little proteid or albuminous matters—from six to twelve per cent on the average—and therefore it requires little acid for its digestion; hence the fat (butter), in depressing the acid secretion, favors the transformation of the large percentage of starch in the bread into maltose and dextrose. On the other hand, the fat is a stimulant to the secretion of the pancreas, and thus an abundance of ferments is secreted into the duodenum and thus secures the digestion of the starch as well as the albumin and fat. Fat, taken alone, is as a rule not indigestible, because it does not interfere in that case with the digestion of other substances. There is no conflict between the various chemical constituents of the food in this instance.

In those cases in which an excessive activity of the gastric glands has led to hyperacidity, fat should be used as a dietetic medication, because it depresses the secretion of the acid. This scientific explanation of the synergistic action of bread and butter is one of the first steps in scientific dietetics. As scientific men occupy themselves more and more with such questions, we hope that dietetics may be lifted from empiricism to a more exact science. It is to be regretted that comparatively few men with scientifically trained minds have occupied themselves with dietetic questions in the laboratories. There can be no more promising and useful field of work. The harvest is plenteous, but the laborers are few.

THE TREATMENT OF OZENA.

The *Journal des Praticiens* of January 6, 1900, states that, as we all know, ozena and atrophic rhinitis are chronic affections which are very rebellious to treatment, both local and general.

In the way of local treatment we should do all in our power to arrest putrefaction of the secretion, and for this purpose nasal douches containing antiseptic and deodorant substances are to be employed, such as boric acid, carbolic acid, chloral, salicylic acid, thymol, eucalyptol, essence of lavender, and similar substances. It is also wise in many cases to change the treatment from time to time. The quantity of liquid which is used in irrigating the nasal spaces should be copious. Two quarts is necessary for each douche, and this should be employed at least twice a day if possible. After each washing the following application should be made with an atomizer:

Carbolic acid, 30 minims;
Resorcin, 45 grains;
Pure glycerin, 2 ounces;
Water, 10 ounces.

Or, in other cases, instead of using this with an atomizer, we may introduce into the nasal spaces, the head being thrown back, a piece of the following ointment, about the size of a bean:

Boric acid, 75 grains;
Vaselin, 6 drachms.

Or,

Resorcin, 15 grains;
Vaselin, 2½ drachms.

Or,

Menthol, 5 grains;
Boric acid, 30 grains;
Vaselin, 1½ ounces.

In other cases it is wise to touch the eroded points, which are ulcerative in character, with nitrate of silver of the strength of 1-to-15, chloride of zinc one-per-cent to ten-per-cent, or with tincture of iodine or chromic acid. A small particle of gauze smeared with ointment, or a vulcanite nasal speculum, may be

used to protect the healthy portions of the nasal cavity.

For general treatment the patient should receive internally cod-liver oil, iodine preparations, arsenic, and quinine. The cod-liver oil, if it is not well borne, may be substituted by the iodide of iron, given in the dose of a teaspoonful or more, once, twice, or thrice a day. Bommier has suggested the following formula as a tonic:

Syrup of gentian, 6 ounces;
Iodide of potassium, 1 drachm;
Chloride of ammonium, 15 grains.

Teaspoonful to a dessertspoonful night and morning.

Or, iodide of arsenic, one-per-cent solution, one to twenty drops according to age three times a day. Or, again, equally good:

Arseniate of sodium, 2 grains;
Distilled water, 10 ounces.

Dessertspoonful once, twice, or thrice a day.

Or again,

Arseniate of sodium, 2 grains;
Syrup of cinchona, 6 ounces;
Syrup of gentian, 6 ounces.

Dessertspoonful two or three times a day.

Should syphilis be present, specific treatment is necessary, and for that Bommier recommends the following:

Iodide of arsenic, 3 grains;
Biniodide of mercury, 6 grains;
Iodide of potassium, 1 drachm;
Distilled water, 4 ounces.

From 4 to 100 drops, one, two, or three times a day, according to age.

Finally a residence at the seashore, or a visit to mineral springs containing sulphur, will prove a useful addition to the treatment.

The following is a treatment for ozena, given by the *Journal de Médecine de Paris* of December 17, 1899: Twice a day a nasal douche of hot water containing a teaspoonful of salt to each quart is to be used. After the nasal cavities have been thoroughly washed, the following ointment is inserted into the nostrils:

Menthol, 3 grains;
Boric acid, 30 grains;
Vaselin, 1 ounce;
Essence of geranium, 20 drops.

This is to be pushed well back into the nasal cavities. The general treatment consists of the administration of cod-liver oil, or if this is not well borne, the following recipe may be substituted:

Chloride of ammonium, 15 grains;
Iodide of potassium, 1 drachm;
Fluid extract of licorice, 2 ounces;
Water, enough to make 8 ounces.

A dessertspoonful to be given morning and night.

Fowler's solution in the dose of one to three drops three times a day may also be taken in place of this mixture.

In cases where it is believed that the ozena is dependent upon hereditary syphilis, the following recipe may be given:

Iodide of arsenic, 3 grains;
Biniodide of mercury, 5 grains;
Iodide of potassium, 1 drachm;
Distilled water, 4 ounces.

The dose of this mixture is from 4 to 100 drops, according to the age of the patient.

THE TREATMENT OF BASEDOW'S DISEASE BY THE MILK OF THYROIDECTOMIZED GOATS.

In the *Correspondenz-Blatt für Schweizer Aerzte*, LANZ records the results which he has obtained in the treatment of Basedow's disease with the milk of goats from which the thyroid gland had been removed.

The idea of the symptoms of Basedow's disease is that they are due to hypersecretion of the thyroid gland, and this may be to a certain extent modified if the thyroid gland is removed. It occurred to Lanz that as this latter operation could not be performed, it might be possible to influence the system of the patient by the use of milk derived from goats which had been deprived of this gland, at least in part.

The milk was administered to three cases. In the first the treatment was followed in fifteen days by a diminution of the frequency of the pulse, disappearance of the headache and insomnia, improvement of the appetite, and notably diminution in the size of the goitre. In the second patient, after a period of nine weeks, there was noticed a diminution in the frequency of the pulse, improvement in the appetite and sleep, diminution of the tremor, and general systematic improvement. Trousseau's sign disappeared. In the third case, at the end of eight days, there was a diminution of the nervous excitation and exophthalmia.

These patients took from two to three glasses of the milk per day.

THE INFLUENCE OF COFFEE ON THE NERVOUS SYSTEM.

The *Journal des Praticiens* of January 6, 1900, says: Caffeism was the subject of a study by Gulliot in 1887, in which he discussed the different nervous troubles produced by an overindulgence in this drug. These consist chiefly in cerebral excitation,

irritability of the spinal cord, and tremors. These tremors were called pseudoalcoholic or pseudoethylic tremors. Bouchard, in speaking of his cases and their resemblance to alcoholic tremors, says that they also resemble somewhat the fibrillar muscular tremors that are seen in choreic animals. Formication, hyperesthesia of the skin, may also be present. The head symptoms consist of vertigo, noises in the ear, and in some cases attacks of syncope, in which the face is pale, or in other instances hysterical manifestations may develop. The article of Nothnagel, in which symptoms resembling epilepsy are spoken of as the result of overindulgence in coffee, is also quoted. In these cases the probability is that the other ingredients of coffee besides caffeine had an effect in disturbing digestion and produced toxemic epileptoid seizures.

The following formulas are given for the administration of caffeine when it is needed:

Caffeine, 30 grains;
Alcohol, 1 ounce;
Simple syrup, 1 ounce;
Distilled water, 5 ounces.
Teaspoonful every few hours.

Or,

Caffeine, 15 grains;
Peppermint water, 3 ounces;
Simple syrup, 1 ounce.
Teaspoonful every few hours.

Or,

Caffeine, 20 grains;
Ether, 2 drachms;
Syrup, 1 ounce.
Distilled water, 3 ounces.
Teaspoonful every few hours.

Or,

Caffeine, 3 grains;
Extract of kola, 2 grains.
To be made into one pill, two or three of which are to be given every day.

THE TREATMENT OF BOILS IN THE EXTERNAL AUDITORY CANAL.

In *La Presse Médicale* of February 28, 1900, we are told that the following plan of treatment is very efficacious, and may be divided into that which is used for the aborting of the inflammation and that which is designed for the cure and the prevention of its return. The only chance for aborting the inflammation is to see it and treat it at its very beginning, and one of the best ways of doing this is to make an application three times a day of a few drops of the tincture of iodine or camphor or naphthol. In other instances, where the inflammation is quite acute, we should carefully illuminate the external auditory canal and then apply a carbolate of glycerin in the proportion of 1 to 10, or borated alcohol in the proportion of 1 to 20. Care should be taken not to use cold water, or cold solutions, because if this is done intense vertigo may be developed. After the application has been made the external auditory canal should be lightly closed with a pledget of absorbent cotton, moistened with some mild ointment. While boils of the external auditory canal never produce very dangerous conditions, they are excessively painful, and therefore the patient demands active treatment. For the relief of pain the physician may introduce the following measures: The external auditory canal should be washed with a hot antiseptic watery solution, either of bichloride or some similar powerful but not irritating antiseptic. At the same time a gentle laxative should be given, for the purpose of thoroughly moving the bowels, and a small dose of antipyrin may be used to alleviate neuralgic pain. When the boil has advanced far enough to be mature and pus is present, it is proper to make an incision, which may be done gently, giving free vent to pus, not only with the object of diminishing pain but also of preventing a further extension of the inflammatory process. The incision of course should be made at the most salient point.

It is almost impossible to use local anesthetics for the purpose of avoiding the pain of this operation. Cocaine will not penetrate through the skin, and chloride of ethyl is too painful, because of the pain which it produces primarily by reason of its coldness. General anesthesia is ordinarily not advisable in such cases. When a general anesthetic is to be employed, bromide of ethyl is perhaps that of choice.

The incision which opens the boil should be deep enough and free enough to enable all the pus which it contains to escape. After the incision has been made and the pus has flowed freely from the boil, the external auditory canal should again be thoroughly washed with a mild antiseptic solution of sufficiently high temperature to be soothing without producing pain, and then a small pledget of absorbent cotton may be placed in the external auditory canal in order to protect it, but not so tightly as to in any way retain the pus or other secretions which may be present. There are several things which it is exceedingly important not to do in the treatment of these cases: First, laudanum, or

balsams, or solutions of belladonna or other drugs, should not be put into the ear; secondly, cocaine should not be freely applied; thirdly, no applications of cold should be made to the neighborhood of the ear for the purpose of aborting the inflammation, as is so often done in other portions of the body; fourthly, care should be taken that the incision in the boil is not made too early; if it is, it produces terrible pain, and is absolutely useless, if not dangerous.

THE ADMINISTRATION OF IRON AND ARSENIC.

The *Journal des Praticiens* of February 21, 1900, recommends the following formula for the administration of iron and arsenic:

Arsenate of sodium, 3 grains;
Sulphate of iron, 3 grains;
Citric acid, 10 grains;
Distilled water, 3 ounces;
Ordinary syrup, 1 quart.

This may be given in the dose of a teaspoonful three times a day. In cases needing larger doses of arsenic, two or three teaspoonfuls three times a day can of course be given.

THE USE OF CAMPHOR IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

ALEXANDER tells us in the *Münchener Medicinische Wochenschrift* of February 27, 1900, of his plan of treating pulmonary tuberculosis by the subcutaneous injection of camphor. After reviewing some of the literature which has been published in regard to this question, he states that in his experience the subcutaneous injection of camphor always produced good effect in the way of supporting the patient, increasing the strength, and allaying cough. His method consists in the daily injection of about two grains of camphor. This may be divided into two doses, or given once a day, according to the wish of the patient or physician. Not only are the symptoms which we have already enumerated improved by this treatment, but it is also stated that fever disappears under its influence. Alexander does not believe that there is any danger through the cumulative action of the camphor when it is given daily in the doses which have been named. He cites individual instances in which camphor has been employed in this manner with excellent results, and does not recognize any contraindications to the institution of his treatment. The best way of administering the camphor is to dissolve it in thirty minims to a drachm of sterilized olive oil, and to inject it into some part of the subcutaneous tissues which is lax, as for example the broad of the back, the flanks, or the anterior abdominal wall.

THE TREATMENT OF NIGHT SWEATS IN CONSUMPTION BY THE USE OF TELLURATE OF SODIUM.

Quite ten or twelve years ago this substance was first brought forward as an antisudorific. We now have a paper by BARIE in the *Journal des Praticiens* of February 17, 1900, in which he says that he has used this substance—tellurate of sodium—with signal success in the treatment of this variety of night sweats, giving it in the dose of from one-twelfth to one-half grain each day, and usually administering it for three or four consecutive days. It never produced any toxic effect in his experience, and as a result of its employment for five years he gives it at the present time with great confidence, with no fear of the development of any untoward effect. The only disagreeable thing about it is that it gives the odor of tellurate of sodium to the breath. Care should be taken that the drug is administered long enough before the expected sweat to have time to be absorbed and produce its physiological influence. It is best administered in alcoholic solutions or in pill, the choice depending somewhat upon the speed with which it is desired that it shall be absorbed, alcoholic solutions, of course, being more rapidly taken up by the stomach than the pill. The tellurate of sodium is a white powder, soluble in water and alcohol, eliminated by urine and the lungs, and the odor of it can readily be noted in the breath, as we have already stated.

Barie then gives us, in addition to his experience with tellurate of sodium, a brief historical *résumé* of the employment of other drugs for the purpose of checking excessive sweating. He mentions the acetate of lead only to condemn it; so, too, agaric does not seem to have been universally useful. Sulphate of atropine, which was introduced into France by Vulpian, is of course a powerful agent for the purpose of checking sweats, but on the other hand it produces such distinct physiological effects upon other portions of the body as to make it difficult to employ in many other cases. Ergot, which has been used by some persons, has not given general

satisfaction. Camphoric acid, on the other hand, is a remedy of very considerable value, and may be given in cachets in the dose of fifteen grains, which, if necessary, may be repeated two or three times a day. Potain is also employed with glycerophosphate of lime, in the dose of a drachm, two or three times a day, with pretty good results in checking sweats. The oxide of zinc, tannin, and the fluid extract of hydrastis have all been employed with ordinarily successful results. None of them are distinctly reliable. The most powerful ones that have been discovered so far, in Barie's belief, are camphoric acid and tellurate of sodium.

A PLASTER OF OXIDE OF ZINC.

The *Journal des Praticiens* of February 21, 1900, states that UNNA suggests the following formula:

Linseed oil, 5 drachms;
Lime water, 5 drachms;
Oxide of zinc, 1 ounce;
Prepared chalk, 1 ounce.

This makes a paste in which various other drugs may be employed for diseased conditions of the skin. The following substances, however, should not be mixed with it: acetic acid, salicylic acid, pyrogallol, phenol, resorcin, or ichthyol. On the other hand, the following medicaments may be added to this paste for application in certain cases of skin diseases with advantage: Corrosive sublimate up to the strength of ten per cent; chrysarobin, ten per cent; balsam of Peru, ten per cent; oil of cade, five per cent; tar, ten per cent; extract of cannabis indica, five per cent; extract of opium, six per cent; menthol, two per cent; oil of almonds, ten per cent; and cocaine, from one-half to one per cent.

THE USES OF NAPHTHOL IN THERAPEUTICS.

The *Journal des Praticiens* of February 24, 1900, tells us that the French Codex of 1884 directed that a druggist should always dispense beta-naphthol. According to studies which have been made by MAXIMOWITCH alpha-naphthol is three times as antiseptic as beta-naphthol, and only one-third as poisonous. Further than this, beta-naphthol is not infrequently badly borne by the stomach and produces a sensation of burning in this organ, and also irritates the mucous membrane of the mouth and pharynx. For this reason Maximowitch has employed alpha-naphthol exclusively. He finds that it is a very valuable intestinal antiseptic, and administers it nearly always in a solution of castor oil. This solution has the advantage that it moves the bowels as well as produces an antiseptic condition. The prescription or formula which he employs is as follows:

Naphthol alpha, 45 grains;
Peppermint water, 1 drachm;
Chloroform, 10 minims;
Castor oil, enough to make 3 ounces.

From a dessertspoonful to a tablespoonful of this mixture may be given to a child of ten years.

Alpha-naphthol can also be administered in the form of tablets made up in the following manner:

Naphthol alpha, 4 grains;
Extract of belladonna, ⅛ grain;
Extract of rhubarb, 1 grain;
Tincture of cinnamon, 2 drops.

Make into one tablet and give from 4 to 6 or 8 of these a day.

A PRESCRIPTION FOR PSORIASIS.

The *Journal de Médecine de Paris* of February 20, 1900, states that DUBLITZ recommends the following formula for this condition:

Vaselin, 1 ounce;
Oxide of zinc, 3 drachms;
Oil of cade, 2 drachms.

This pomade is to be applied to the skin for fifteen consecutive days, and at the end of this time it is claimed that a cure will be produced.

THE USE OF THE SULPHATE OF LOBELINE IN ASTHMA.

The *Journal de Médecine de Paris* of February 25, 1900, tells us that lobeline has been quite largely used in the treatment of this condition with pretty good results, in that it exercises as useful a therapeutic influence upon the bronchial tubes as does the vinegar of lobelia, and does not produce nausea and vomiting.

This journal states that Nunez has used lobeline by the mouth or hypodermically in doses varying from one to seven grains. We should think, however, that these quantities are rather large until we have proved that the patient was not susceptible to the drug. It is claimed that the patient speedily gets accustomed to this drug, so that large doses are often necessary. The drug may be given, it is claimed, in the dose of a sixth to one grain for children who suffer from asthmatic attacks.

THE INFLUENCE OF ANESTHETICS ON THE PERMEABILITY OF THE KIDNEYS.

Two Italian investigators, GALLEAZI and BRILLO, have carried out a series of experiments upon animals to determine this question. Instead of using the methods of testing the urine for albumin and similar measures, they have employed methylene blue injections. As a result of their experience they claim that the effect of chloroform is to impair the permeability of the kidney much more than does ether, with the result that where methylene blue is given and chloroform is used the elimination of the methylene blue is distinctly delayed.

A CLINICAL STUDY OF HEROIN.

DALY, in the *Boston Medical and Surgical Journal* of February 22, 1900, believes as a result of his study of this subject that in almost every case in which heroin has been tried it has been of some service in the alleviation of cough, be that service ever so slight. Even his advanced cases have been to a certain extent relieved. Dr. Daly found, however, that the more favorable results were obtained in those cases in which the disease process had not advanced to too great an extent. In this class of cases the drug never failed to loosen a hard cough and produce free expectoration, giving marked relief from pain when present. He regards it as unequaled as a sedative in the treatment of cough of pulmonary tuberculosis, and ventures to say, although he has not yet tested it in cases of cough in other pulmonary affections, that it will act equally well in such cases.

The smaller dose of one-twelfth grain is sufficient to afford relief in most cases, certainly in the milder or earlier ones, but in some instances it was found necessary to increase the dose to one-sixth grain, as after a time the smaller dose seemed to lose its effect upon the patient. Sometimes when heroin had been taken for a long time, it was found to be a good plan to stop it and give codeine, or some other sedative, for one week, and then renew the heroin at the end of this time. In this way the drug acted as well when renewed as in the beginning of the treatment. It is true, however, that heroin produces its effect for a much longer period than does any of the other sedatives used in this affection.

Heroin is not a hypnotic, but the fact that it relieves the distressing cough, which is often the cause of many sleepless nights, and thus insures a natural sleep, obviating the necessity of using hypnotics, should not be overlooked. Dr. Daly has carefully watched the temperature charts for any evidence of its action as an antipyretic, but has been unable to find that it produces any effect whatever on the temperature. It certainly possesses no quality as preventive or curative of the chills so persistently present in the later stages of tuberculosis. Like the respiration, the pulse is rendered fuller and slower. In ten cases observed the mean pulse-rate was reduced about four beats per minute; in one case the rate was reduced eight beats per minute. By its action upon respiration and its ability to relieve cough and promote excretion of secretory products, it manifests a decided effect upon the dyspnea.

Daly regards the influence of heroin on the night sweats as second only in importance to its influence as a sedative for the cough. In the cases cited its quality as an adjuvant to the ordinary remedies in checking the sweats was well marked. In six other cases favorable results were obtained in either checking or markedly decreasing the sweat by the administration of heroin in conjunction with one or another of the ordinary anhydrotics. Its action in this particular is best appreciated after meeting failure in using the ordinary agent alone.

The cases of tubercular laryngitis mentioned are typical of its action as an analgesic in the treatment of the painful throats of this affection. In these cases it afforded considerable relief from pain for periods of about one to two hours following the administration of the pill.

In regard to its influence on respiration, Dr. Daly has carefully noted nineteen cases, and has found that in each case the mean respiration A.M. and P.M. has been reduced from two to five, and in some cases as high as seven per minute.

No action on the intestines was observed, except perhaps a slight tendency to constipation if given in larger doses than one-twelfth grain. Of this, however, he will not be certain, as in the great majority of cases this action was not apparent. In some cases it has been noticed to cause a disturbance of the stomach. One patient complained that the drug caused considerable nausea shortly after taking, while with others the disturbance can best be described by using a term

applied by a patient to the condition of his stomach after taking heroin—"squeamish." One complained of complete loss of appetite whenever he took the drug. In all, some disturbance was noted in five cases out of upwards of seventy patients taking the drug. Daly adds, however, that two of those who complained of disturbance of the stomach while taking heroin were later able to use it without noticing any ill effects. Another, and in his opinion the only real, objection to heroin is that in certain cases the larger dose of one-sixth grain was found to cause a feeling of heaviness during the day. To quote a patient: "I feel heavy and as though I want to sleep, but if I try to do so I find that I cannot." This was observed in four cases. The drug did not in any instance produce this effect when given in the smaller dose.

But the chief use to which heroin can be put is as a sedative for the cough and to prevent the distressing and disagreeable stagnation of secretory products in the lungs, particularly in cases of pulmonary tuberculosis. No drug can compare with heroin in this particular. Cases that have come into the hospital with painful and almost constant cough, with inability to raise the sputum, resulting in fetid breath and more or less dyspnea, have been almost immediately relieved of pain, and the expectoration rendered freer, with decrease in the dyspnea, by the administration of heroin in doses of one-twelfth grain three times daily.

METHYLENE BLUE IN MALARIA.

SMITHWICK in *Merck's Archives* for February, 1900, from the reports of others and his own observations, has reached the following conclusions in regard to this drug:

1. Methylene blue is a perfect succedaneum for quinine, and may be given whenever the latter drug is indicated in the treatment of malaria of every form and under all conditions, with the same confidence that has always attended the administration of quinine.

2. Patients need not be selected on account of idiosyncrasies, as no bad effects ever follow the use of methylene blue, if given intelligently.

3. It is the remedy to use in malaria with hematuric complications, as it acts in a two-fold manner.

4. It is the remedy to be given in malaria occurring during the pregnant period, as it has no oxytocic effect and will cause a freer action of the kidneys, which is also beneficial.

FOOD IN TYPHOID FEVER.

We have called attention a number of times in the original, editorial, and progress columns of the THERAPEUTIC GAZETTE to the value of additional food, over and above milk, in the treatment of typhoid fever. The latest contribution to this interesting subject is by VAQUES, of Paris, who writes advocating this method in *La Presse Médicale* of February 10, 1900.

THE ELIMINATION OF METHYLENE BLUE.

At a recent meeting of the Société Médicale des Hôpitaux, ACHARD and CLERC recorded their views in regard to the duration or rate of elimination of methylene blue.

It will be remembered that Castaigne has pointed out that its elimination is prolonged if there is any condition which impairs the permeability of the kidneys, as, for example, in the case of parenchymatous nephritis. As a rule the material is eliminated in the urine in a very short time after the drug is swallowed, and continues in a more or less marked degree for a period of twenty-four or forty-eight hours.

They also found that in chronic contracted kidney there is a very great decrease in the permeability of the kidney and the rapidity with which the blue escapes, and they believe the severity of the lesion is in direct proportion to the slowness of the elimination.—*La Presse Médicale*, Feb. 10, 1900.

THE TREATMENT OF URTICARIA.

WOLFF, in the *Journal de Médecine de Paris* of February 25, 1900, employs the following treatment. He claims that by this means he is able to produce a cure in the space of about twenty-four hours. He administers every three hours about sixty grains of phosphate of sodium. Locally he prescribes the following lotion:

Prepared calamine,
Oxide of zinc, of each 1½ drachms;
Carbolic acid, 30 minims;
Lime water, 2 ounces;
Distilled water, 3 ounces.

If the child's skin is very delicate the quantity of carbolic acid should be somewhat less than this. In chronic urticaria he believes that the phosphate of sodium is as useful as it is in the acute form, but it must be given in sufficiently full doses to produce a distinct laxative effect upon the bowels.

THE TREATMENT OF RICKETS IN CHILDREN WITH PHOSPHORUS.

The *Journal de Médecine de Paris* tells us that KASSOWITZ has treated no less than 560 rachitic children by the administration of full doses of phosphorus in each twenty-four hours. He claims very rapid improvement, particularly in relation to the craniotabes; the deformity and other characteristic symptoms speedily disappear. Betz employed phosphorus in the form of a pomade. The following formula is used:

Phosphorus, 1-2 grain;
Cod-liver oil, 3 ounces.

Teaspoonful twice a day.

Or,

Phosphorus, 1-2 grain;
Oil of sweet almonds, 1 ounce;
Powdered gum arabic, 1-2 ounce;
Powdered sugar, 1-2 ounce;
Distilled water, 1 1-2 ounces.

Shake well and give one to three tablespoonfuls per day.

PRESCRIPTION FOR MENSTRUAL PAIN.

Les Nouveaux Remèdes of February 8, 1900, gives the following prescription:

Codeine, 1 grain;
Chloral, 15 grains;
Bromide of ammonium, 15 grains;
Camphor water, 1 ounce.

One-quarter to one-half of this preparation may be given before retiring at night.

A CREOSOTE WINE.

According to *Les Nouveaux Remèdes* of February 8, 1900, the following prescription for a creosote wine may be employed:

Creosote, ½ ounce;
Tincture of gentian, 1 ounce;
Alcohol, 8 ounces;
Sherry wine, enough to make a quart.

Two or three dessertspoonfuls of this mixture may be given a day in cases of pulmonary tuberculosis, provided the temperature is not very distinctly febrile.

TREATMENT OF CONSTIPATION BY IPECAC.

According to the *Journal de Médecine de Paris* of February 11, 1900, BLONDEL in gynecological practice often finds that constipation depends upon the loss of power in the intestinal muscles and lack of secretion of mucus. The treatment, he believes, under these circumstances should consist of massage, proper regulation of the diet, and in the administration of ipecac. He directs that 2½ drachms of the aqueous extract of ipecac shall be dissolved in two ounces of distilled water. One teaspoonful of this is placed in four ounces of water and given by rectal injection each morning. He has never seen this method of treatment produce any nausea, and has frequently seen it do a great deal of good.

THE TREATMENT OF CHOREA BY THE USE OF THE OIL OF WINTER-GREEN.

LUIGI (*Journal de Médecine de Paris*, Feb. 11, 1900) has recommended, as many clinicians before him, the use of gaultheria in the treatment of rheumatism, and as an antipyretic in erysipelas, scarlet fever, and even in tuberculosis. More recently its use has been suggested in the treatment of chorea, particularly in those cases in which there is a rheumatic diathesis. Under these circumstances it should not be given internally, but from one-half to two drachms of the oil should be applied to the skin by means of friction each day, until a sufficient quantity is absorbed to produce distinct systemic effect.

THE TREATMENT OF BILIOUS HEMATURIC FEVER.

This question, which has been so much debated by physicians in this country and abroad, receives another contribution in the article of MENSE in the *Archiv für Schiffs und Tropen Hygiene* for 1899, p. 214, in which after giving a historical *résumé* of the subject of bilious hematuric fever, and quoting remarks made by Koch and Tomaselli, he goes on to describe his own personal experience in the treatment of the disease. In a number of cases which he had under his care in the Congo Free State, he treated them by methods which seemed indicated by the symptoms manifested by the patients, and depended largely upon opium, purgatives, and hot drinks, notably tea, but no quinine.

THE TREATMENT OF PELVIC NEURALGIA.

Pelvic pain may arise from metritis, salpingo-ovaritis, cellulitis, or pelvic peritonitis. It is met with in women after the menopause and is often associated with lumbosacral neuralgia.

An examination of such cases often fails to reveal any abnormality in the directions we have already named, and in these instances it should not be forgotten that the pains may be rheumatic in character and that one of the salicylates may be advantageous.

One method of treating this condition would be the administration of five to fifteen grains of salicin three times a day; the drug being placed in cachets or capsules, taken after meals and followed by a glass of water. In other instances other salicylates may be tried when salicin disagrees with the stomach, as, for example, salol or the new preparation, aspirin.—*Journal de Médecine de Paris*, Feb. 11, 1900.

TREATMENT OF HEMORRHOIDS WITH CHRYSAROBIN.

After disinfection of the part by means of creolin or carbolic acid solutions the following formulas may be used:

Chrysarobin, 12 grains;
Iodoform, 5 grains;
Extract of belladonna, 8 grains;
Vaselin, 1 ounce.

Or a suppository as follows:

Chrysarobin, 1 grain;
Iodoform, ½ grain;
Extract of belladonna, 1-6 grain;
Cocoa butter, 30 grains.

After these applications have been used for a few days the pain of the hemorrhoids usually disappears, and if the applications are persisted in, at the end of three to five months the hemorrhoids are shriveled in many cases.—*Journal de Médecine de Paris*, Feb. 11, 1900.

HOME REMEDY FOR LEG ULCERS.

In reply to the many inquiries concerning the exact formula and method of preparation of the "home remedy for leg ulcers" mentioned some time ago, Dr. BUEHLER states somewhat in detail the formula successfully used by him as prepared by his druggist. A pint of boiled linseed oil is heated thoroughly, and in it is put a half-pound of the red oxide of lead and the mixture allowed to boil thoroughly, and after cooling it is again boiled, and on cooling a second time a half-ounce of gum camphor is stirred in. The oxide of lead, as he understands it, is decomposed into a black oxide and the repeated boiling changes the consistency so that it can be made into a stick much after the fashion of diachylon plaster, and can be spread on a cloth by heating over an alcohol flame.

Buehler would like to emphasize particularly that his good results have been obtained in indurated varicose leg ulcers. He has tried this paste on the syphilitic leg ulcers with very little success.—*Philadelphia Medical Journal*, Feb. 17, 1900.

NEW SALINE INJECTION MIXTURE.

A. SCHIEKING (*Therapeutische Monatshefte*, December, 1899) points out that the addition of calcium and other salts to physiological saline solutions, as shown more especially by Sydney Ringer, has a favorable effect on cardiac action; but he also draws attention to a fact of equal importance, namely, that the ideal saline injection fluid should contain among its constituents a substance capable of taking up into chemical combination the carbon dioxide present in excess in the blood and lymph bathing the tissues. Normally, of course, this is accomplished by the presence of an alkaline globulin compound in the circulatory blood, which in the presence of carbon dioxide forms an alkaline carbonate and a free globulin. Premising that it is not likely that these unstable compounds would maintain their integrity during the process of transfusion of blood from one individual to another, and realizing that the heart would be probably weakened and handicapped in its action owing to the liberation of potassium salts, resulting from the breakdown of a considerable number of blood-corpuscles (such as always takes place in transfusion), Schieking was led to devise a really effective saline mixture. He states that it may be impossible at present to produce artificially the complex globulin compounds in the blood, but he has found in sodium saccharate a drug which seems to possess valuable properties of the needful kind. This salt is a gelatinous substance of somewhat bitter taste, and freely soluble in water, and in presence of carbon dioxide it readily undergoes decomposition, forming sodium carbonate and sugar. The free carbon dioxide is thus, by its agency, at once taken up into stable combination, and its toxic power thereby neutralized. His early experiments with this fluid on frogs and on warm-blooded animals in a state of collapse or of partial animation gave the most favorable results, and he was thereby led to try it on suitable patients. The clinical use of this drug bore out all the expectations formed, and no dele-

terious effects were ever noticed. Good results were obtained even where the use of the usual normal saline solution failed to improve the condition of the patient. The solution for use contained 0.03 per cent of the sodium saccharate and 0 7 per cent of sodium chloride. Care had to be taken that the mixture contained neither free sodium hydrate nor sugar—in other words, that the sodium saccharate was pure.—*British Medical Journal*, Feb. 3, 1900.

DIALYZED DIGITALIS.

Bosse (*Centralblatt für Innere Medicin*, July 8, 1899) has had good results with a preparation of digitalis obtained by dialysis by the process of Golaz. It is obtained from the freshly plucked plant, one part by weight of the dialysite corresponding exactly to one part of the plants. The fresh plants are probably more active than the dried. Other advantages are that all strong reagents are avoided during the process of extraction of the active constituents, whose percentage is exactly estimated, so that the preparation is a standard one. This feature is important, and is not shared by the ordinary preparations of digitalis. Jaquet's experiments showed that in activity it stands between Merck's digitoxin and true digitalin, and that it probably contains both glucosides. He believes that the maximum daily dose should be fixed at 80 to 100 drops, 6 to 10 drops being the usual single dose for an adult. Bosse found that it relieved all cardiac symptoms quickly, and that its diuretic effect was particularly marked and persistent. No toxic symptoms were observed. Like other preparations of digitalis its action is often not apparent for two to four days.—*British Medical Journal*, Feb. 3, 1900.

THE TREATMENT OF RHEUMATISM.

At a recent meeting of the Society of the Alumni of Bellevue Hospital, reported in the *New York Medical Journal* of February 10, 1900, Dr. A. A. Smith spoke on this topic. He said that in taking up the subject of the treatment of rheumatism one would naturally think first of the various forms of rheumatism. Speaking of acute articular rheumatism, he said that the patient should be placed in bed, if not already there. He is a firm believer in the protective benefits of proper clothing; a rheumatic individual should be completely clothed in a woolen garment, and should be placed between two woolen covers to sleep. At first he had looked upon this as a fad, but he has gradually come to believe that it is a very decided protective. As soon as possible the patient should be placed under the influence of some salicyl compound, preferably the salicylate of sodium. He is in the habit of giving fifteen grains every two hours until the patient complains of nausea or the drug has markedly controlled the pain and to some extent the temperature. The average patient would object after having taken a hundred to a hundred and twenty grains, but by using a little care much of the unpleasant ill effect on the gastric mucous membrane can be avoided.

Dr. Smith does not fully sympathize with the opinions which he has often heard expressed regarding the marked depressing effects of the salicyl compounds on the circulation. His own belief is that it requires an enormous amount of such a compound to produce this effect, although it is quite true that if the drug produces vomiting or nausea there will be a circulatory depression. Usually within thirty-six to forty-eight hours the patient will be decidedly relieved, and he then gives ten-grain doses at longer intervals. He is entirely in accord with those who believe the treatment by the salicyl compounds to be more liable to be followed by recurrences than other methods of treatment, though one of the common mistakes is that the remedy is not continued sufficiently long. It is not necessary to continue it in large doses, but it should be kept up in moderate doses for from five to ten days. The recurrences seemed to him often the result of allowing the patient to get up too soon. He invariably gives an alkali, preferring the bicarbonate of sodium. The bicarbonate of potassium, when given in connection with the salicylates, is more likely to be accompanied by gastric irritability. He does not continue the salicylates, however, nearly as long as the alkalies. During the first thirty-six or forty-eight hours the bicarbonate of sodium is given in doses of half a drachm every two hours. The irritability of the stomach can be controlled by using an effervescent draught, made by mixing citric acid with the medicine at the time of taking. This is the old Bellevue Hospital mixture. By adopting the precautions mentioned, fifteen-grain doses of the salicylate of sodium could be continued rather longer if necessary—say fifteen grains for perhaps twelve or fifteen doses. He also

insisted upon using the salicylate of sodium made from the oil of wintergreen instead of that made from the refining of coal tar.

In passing, he would say that the oil of wintergreen itself was useful, given in doses of ten minims every two hours, for the acute manifestations. It is best given in the form of the globules found on the market. It has been claimed by some that oil of wintergreen is not so likely to be accompanied by delirium or ringing in the ears, yet perhaps the most active nervous disturbance of this kind that Dr. Smith has seen has been with the oil of wintergreen. However, this occurs very seldom, and is easily controlled by stopping the drug and administering a dose of some alcoholic, such as whiskey. He uses oil of wintergreen on the same plan as the salicylate of sodium, giving it every two hours for thirty-six or forty-eight hours, and then lengthening the interval and often diminishing the dose. If the manifestations of the disease were fairly active he would probably continue the dose of ten minims, only lengthening the interval. This would be kept up for several days after all pain and elevation of temperature had disappeared. The alkali is given in the same way, but is not continued after the first forty-eight hours at the same rate, being administered after this time in accordance with the reaction of the urine, the effort being to keep it alkaline.

Dr. Smith has also used with satisfactory results salophen in ten-grain doses every two hours for the first twenty-four or thirty-six hours, and then in the same doses at longer intervals. He combines the alkali with this as with the other forms of the salicylates, for he thoroughly believes in the beneficial results of alkalies in the treatment of rheumatism. He has not obtained satisfactory results from the use of salol in the treatment of the acute manifestations, but he frequently makes use of it for the subacute condition left after the more acute attack. He is such a firm believer in the connection between the condition of intestinal digestion and the development of rheumatism that he always accompanies the treatment with the giving of cathartics, and he likes particularly for this purpose Rochelle salts. It belongs to the family of alkalies, and acts therefore, not only as an alkali, but as a diuretic and cathartic. At the time that salicin was advocated so vigorously he had great hopes of getting better results. He has given it in doses of a drachm, every two hours, but has never seen any benefit from it in the acute manifestations. It does not produce gastric disturbance; it is a capital tonic, and might be given after the acute manifestations have subsided. It seems to him to have the power of preventing relapses. He ordinarily gives only fifteen or twenty grains every three hours, with the object of preventing recurrences.

Dr. Smith has used lactophenin with a fair degree of satisfaction in a certain class of cases—*i.e.*, those in which the acute manifestations have been controlled. In doses of ten grains every six hours it has seemed to prevent recurrences, but it is not satisfactory in the treatment of the acute manifestations. After all, he has used invariably, at the beginning of an acute attack, the salicylate of sodium, for, so far as he knows, it is the most reliable agent for controlling the elevation of the temperature and the pain in the joints in the early stage of acute articular rheumatism, when given in conjunction with alkalies.

Regarding external applications, Dr. Smith said that he first began their use when a medical student, but soon discarded them, because the practice had been discountenanced by the visiting physicians at the hospital. He has, however, returned to them, and now believes that the old application of cotton-batting with oiled silk, cumbersome as it is, has a good effect simply in relieving pain. He has never found any special benefit from the combination of opium, in the form of the tincture of opium, with any external application, although fully aware that this is a strictly heterodox statement. Fuller's application of an alkali with opium added he does not believe to be any more beneficial than the alkali without the opium. He has found that an application of a saturated solution of bicarbonate of soda to a joint is decidedly advantageous. The combination of oil of wintergreen with sweet oil, as used in the hospital, as an application to painful rheumatic joints has in a certain proportion of cases given relief. He has even applied the oil of wintergreen in its purity to the joint, but it is too expensive for such use. He has certainly known patients to be relieved from an application of the pure oil of wintergreen as well as from the combination with olive oil. Both heat and cold have served him well in relieving the pain accompanying acute rheumatism. He is unable to give the indications for using these two applications; he has often alternated them or gone from one to the other. Where

the wrist joints are swollen very satisfactory results are secured by the application of a splint. This is sometimes true in rheumatism affecting the joints of the hand and the elbow-joints. He sees no advantage, however, from using a water-glass splint for this purpose.

In connection with acute articular rheumatism Dr. Smith wished to mention still another remedy that has proved useful. In cases showing a tendency to slight but persistent recurrence he has observed very decided relief from the continued use of tincture of chloride of iron, not only in relieving the anemia, but in relieving the wandering pains so often noted. It is more particularly useful in subjects under fifteen years of age. In another class of cases showing the tendency to recurrence—persons who were thin and anemic—he has seen good results from the administration of cod liver oil. It seems to protect such patients very decidedly against the development of more acute attacks. In his opinion the iodides are applicable only to the older subjects, quite likely owing to the tendency to the increase of connective tissue in people of this age. The administration of this remedy often seems to be a protection against recurrences.

MALARIAL HEMATURIA.

BAT SMITH writes upon this subject in the *New York Medical Journal* of February 10, 1900. He believes that there is no doubt that the termination of any case of malarial hematuria will depend greatly upon the extent of the lesions in the kidneys, and it is a matter of great importance to eliminate the *materies morbi*, and so shape our therapeutics as to reestablish in the shortest time possible the functions of the different organs in equally balanced activity. Now we know that the tubuli uriniferi are filled to a great extent with coagulated blood, and a large number are almost totally denuded of their pavement epithelium (endothelium) by reason of the congested and inflamed condition of the kidneys. We know also that the function of this pavement epithelium is to separate from the blood certain substances which are the result of chemical action in the body. Chemical analysis shows that eleven-twelfths of the urea which should pass out of the system through the kidneys is retained in the circulation, and should relief not be speedily obtained the patient will most surely die of uremic poisoning. It is also well known that the simpler the tissue of a structure, the more rapidly it is regenerated, and of all the anatomical elements the epithelial cell is the simplest in structure. The indications, therefore, are to give the kidneys absolute rest, and to throw the entire burden of the elimination upon the skin and bowels. By so doing and relieving the kidneys of their congested condition, the pavement epithelium will be regenerated in a remarkably short time, and the renal functions reestablished.

The remedy which has given the best results is calomel in decided doses, and if we cannot get the mercury to act as promptly as we would wish, it should be followed by some active hydragogue. In many cases it would be well to administer at the outset a large enema of warm water, as constipation is the general rule. To encourage the action of the skin hot mustard foot-baths should be given, and the body sponged with hot water and alcohol in some form. Some of the derivatives of coal tar have also been used with great satisfaction in these cases, more especially phenacetine, in doses of from five to ten grains, combined with one-fourth to one-half grain of ipecacuanha and one to two grains of the citrate of caffeine. The writer is aware of the diuretic action of both caffeine and calomel, but the former is in these cases given in small doses, and its action on the kidneys is neutralized by the diaphoretic action of the phenacetine. The calomel is administered in large doses, and its action upon the alimentary canal is so energetic that the kidneys are not affected by the drug. The coal-tar derivatives should be given with caution, and the heart's action carefully watched.

Diuretics are of all the remedies those which are most certainly contraindicated. The kidneys are already overcharged with blood, and we surely should not add fuel to the flame. Yet some very intelligent physicians claim to have found this class of remedies very serviceable. It seems, however, that to lash a crippled organ into the performance of function is unwise.

The use of hemostatics, which are held in high estimation by a number of practitioners, has in the author's experience proved somewhat disappointing, and although he would be far from condemning the use of ergot, gallic acid, or the elixir of vitriol in some cases where the hemorrhage is unusually obstinate, yet he would much rather rely upon some preparation of iron, and by preference

the dialyzed iron, which is mild and can be given in large doses, as the stomach bears it well.

The hyposulphite of sodium has been extolled by some practitioners as a highly useful remedy in malarial hematuria. He has given the drug a fair trial, but has found it of little value, and the verdict of other physicians with whom he has conversed on the subject is decidedly adverse.

The author has always found it necessary to keep the skin and bowels acting freely until the renal functions have been reestablished, and at the same time sustaining the patient's strength as much as possible. If the calomel is given in the powdered form it acts more readily, and is too heavy to be vomited. The vomiting generally ceases when the mercury begins to act.

The disease being of malarial origin, many writers maintain that the first indication is to secure complete cinchonism as early as possible, claiming that as the hemorrhage originates during a chill the course of treatment which prevents the recurrence of the paroxysm will mitigate the hemorrhage, if it does not stop it altogether. They therefore advocate the administration of the sulphate of quinine in large doses. In differing radically from this view of the treatment of malarial hematuria, Smith is well aware that he subjects himself to much adverse criticism. Yet as far back as in the days of Orfila and Pareira sulphate of quinine was recognized as having powerful diuretic properties. This is not denied by our more recent authors. Knowing the lesions existing in the kidneys, he early refrained from giving the sulphate of quinine or any of the salts of cinchona, preferring to rely on mercury and on the diaphoretic action of the skin to eliminate the poison, rather than to risk aggravating the already dangerous condition of the renal organs. In this view of the action of sulphate of quinine he is sustained by most if not all the physicians of his section of the country, viz., the Colorado and Brazos bottoms (Texas), where the disease is frequently met with. It would be difficult to induce one of them to administer quinine in malarial hematuria, even after the hemorrhage has been checked, for fear of reproducing it.

Dr. John H. Bowers, of Columbus, Texas, the oldest practitioner in the State, and a man of superb attainments and vast experience, in speaking of this disease some years ago, stated that in his long experience, extending over considerably more than half a century, he had never seen a case of malarial hematuria in which sulphate of quinine had been administered but what the patient died, and that he did not recollect one in which it was withheld but that the patient recovered. The testimony of the late Dr. Gibson and Dr. Moore, old and well known physicians of Richmond, Texas, was to the same effect, as was also that of the late Dr. Gerard Alexander, of Wharton, Texas, who said that in his long experience as a surgeon in the United States navy on the coast of Africa and in Central and South America, and also as a practitioner in southern Texas, he had always looked upon the administration of quinine in malarial hematuria as equal to a death-warrant.

Dr. August Soltman, of Wharton, says that he has frequently known the injudicious use of quinine, both in Central America and in this country, to produce hematuria. In Dr. Smith's own experience, the only deaths he has ever witnessed in malarial hematuria were those in which quinine had been given. He knows several persons residing in his section of the country who have suffered from attacks of malarial hematuria, and in whom ten to twenty grains of quinine will produce hematuria.

Considering that it is important not to permit a return of the paroxysm, and taking the view here presented of the action of quinine, we must look elsewhere for relief, calomel being chiefly relied upon. After the action of the calomel the nausea and vomiting are usually relieved, and the system is in a better condition for absorption and assimilation. Salicin may be given for its antiperiodic properties, and although the drug cannot always be relied upon, it frequently proves a good substitute for the more dangerous salts of cinchona. The cold infusion of wild cherry bark and tincture of cinchona is a great favorite with the physicians in southern Texas, especially during the stage of convalescence. To this may be added, after the danger of its combination with calomel shall have passed, a drop of nitrohydrochloric acid.

The blood being much depraved in malarial hematuria, this condition should be corrected as speedily as possible by giving the patient good, nutritious food. Among the wines, the best seems to be a good claret. The salts of the blood should be replaced at this stage, and for that purpose the phosphates of calcium, sodium, and potassium are the most available. The muriated tinc-

ture of iron in combination with chlorate of potassium is also a valuable remedy.

Malarial hematuria is in many localities looked upon as one of the most fatal of all diseases. Dr. Smith cannot consider it so, yet so it will remain so long as we trust to cinchonism as a sheet-anchor, in his opinion.

FRACTURE OF THE NECK OF THE HUMERUS WITH DISLOCATION OF THE UPPER FRAGMENT TREATED BY OPERATION.

CURTIS (*Annals of Surgery*, March, 1900), in an article on fracture-dislocation of the humerus, states in conclusion that in this serious and rather rare combination of fracture of the humerus at the surgical neck or higher, with simultaneous displacement of the head from the glenoid cavity, when proper attempts at simple reduction under general anesthesia have failed, operative measures should be resorted to, unless shock, other injuries, or extensive damage to the soft parts about the shoulder, justify delay. A delay of from one to four weeks will not impair the result.

Anterior displacements require an anterior incision; subglenoid or posterior displacements require a posterior incision, preferably by Kocher's method.

The head should be restored to its place, if possible, and resection resorted to only when reduction is impossible or would require such extensive damage to the parts, or such prolongation of the operation, as to increase the dangers of wound infection or of shock.

Resection will probably give a better result in fracture of the anatomical neck than in that of the surgical, but reduction is to be preferred in both cases.

Asepsis is an indispensable requirement for a good functional result, and these operations must not be undertaken except under aseptic conditions.

Motion should be begun in the joint as soon as the wound has healed, in ten to fourteen days after the operation.

THE CAUSES AND TREATMENT OF MOVABLE KIDNEY.

MOULLIN (*British Medical Journal*, March 10, 1900) states that the kidneys are maintained in position partly by the pressure in the extraperitoneal space, partly by the way in which they fit into the lumbar recesses. Neither of these is sufficient without the other. These lumbar recesses in the male are deep, narrow, and pear-shaped, with the narrow end below. In the female, owing to the greater width of the pelvis, they are shallower and more cylindrical, and the difference in shape is almost always more marked upon the right side than upon the left. The choice of treatment lies between wearing an abdominal belt and nephrorrhaphy. The author states that in his experience it is only in the milder cases that the former succeeds, and then it must be combined with massage and exercises calculated to strengthen the abdominal muscles. A belt braces the viscera together, and so steadies the displaced organ, but it cannot press the kidney back into its place or retain it there after it has been reduced, if the patient stands upright and takes a deep breath. Pads are useless. For all cases in which there is manifest deformity of the lumbar region, associated with movable kidney, or in which there is real distress, even if the mobility attains no higher degree than the anteversion of Potain, Moullin never hesitates to recommend nephrorrhaphy. In the former case it is advisable, in order to save the kidney from hydronephrosis and other troubles. In the latter he believes it to be the most certain method of giving relief, and has never known it to fail when properly carried out, if the symptoms have not already lasted so long as to produce an indelible impression upon the patient's nervous system.

THE CHOICE OF OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA.

RIXFORD (*Occidental Medical Times*, March 1, 1900) calls attention to some of the excellences of operations other than the Bassini which have been planned for the radical cure of hernia. He states that the Kocher operation, which consists in obliterating the opening of the sac together with the funnel-shaped depression at its neck, and then drawing the sac outward underneath the external oblique muscle, where it is anchored by sutures, is suitable for those cases, either congenital or infantile, in which the canal is only slightly distended and in which the sac is long and narrow. Such hernias are especially frequent in children, and in them the treatment of the sac, according to Kocher's method, will be in a large measure successful.

The Bassini and Macewen operations will be probably the most successful in those cases in which the conjoined tendon is found by the finger, inserted into the canal, to be firm and well developed. As between these two operations the Bassini should be preferred in those cases where it seems advisable to take up slack in the external oblique aponeurosis by approximating the pillars of the external ring, and where from serious adhesions it is necessary to cut the external oblique in order to reduce the hernial contents. The real ground for debate in the hernia question is in the management of cases in which the conjoined tendon is thin and flimsy. Perhaps the weakness in the abdominal wall, resulting from this, may be best overcome by transplantation of the rectus, as suggested by Bloodgood.

Success, however, will in the main depend upon the making of a neat dissection and doing a minimum of violence to the tissues.

THE TREATMENT OF BACTERIURIA.

JEANBRAU (*Annales des Maladies des Organes Génito-Urinaires*, No. 2, 1900) treats bacteriuria by lavage and instillations of silver nitrate, sublimate or protargol, combined with salol given in increasing doses, as much as two and a half drachms a day being given. This medicament is combined with large quantities of water.

Denys has successfully used an antistreptococcic serum, when the streptococci are found as the dominant organisms. There are certain cases which prove absolutely rebellious to intravesical treatment. Under such circumstances ureteral catheterization should be practiced, the pelves of the kidneys being subjected to antiseptic flushings.

PROLAPSUS OF THE RECTUM IN CHILDREN.

CUMSTON (*Annals of Surgery*, March, 1900) states that in the large majority of cases prolapsus of the rectum in children will readily yield to medical treatment if instituted early. The judicious use of a rubber rectal plug to keep the prolapse reduced, cleanliness, and tonic treatment with the use of strychnine, will probably give the best results. If the prolapsus has for etiological factor a polypus, hemorrhoids, or other local lesion, it is very evident that the surgeon's efforts should be directed toward the cure of the latter, and generally, after this has been accomplished, a proper medical treatment will do away with the prolapsus, if it is not too far advanced.

When a prolapsus has reached a certain stage, when it has become irreducible, or when it has become constricted by the sphincter ani and gangrene is imminent, resection of the prolapsed part is the method of choice.

The preparation of a patient for the operation is similar to that employed in all operations on the intestine. A complete evacuation of the bowels by the use of laxatives and enemas is necessary, but, of course, if we are dealing with a case where the gut has become strangulated from constriction of the anal sphincter, the use of purgatives of cleansing enemas cannot be resorted to.

A few hours before the operation tincture of opium may be given in sufficient quantity to quiet the intestines during, and for some time after, the operation. The field of operation is thoroughly disinfected, and during the operation the free use of mild antiseptics, when necessary, should be resorted to. The patient should be placed in the lithotomy position.

As to the technique of the operation, it varies very greatly, and almost every surgeon has devised some method of his own.

Mikulicz first cuts through the outer intestinal tube in its anterior circumference by cutting the tissues, layer after layer, catching up each bleeding vessel as it appears, and ligating it with fine catgut. As soon as the peritoneal pouch has been opened its interior is examined for the presence of small intestine. The peritoneal cavity is then closed by a running suture. The anterior aspect of the internal intestinal tube is cut through little by little until it is opened, and then both intestinal tubes are united by deep silk sutures to the entire line of the incision.

The posterior circumference of the prolapsus is treated in absolutely the same way, both intestinal ends being united by means of silk sutures, and thus the resection is completed.

Mikulicz's method has been followed by Billroth, Nicoladoni, Bogdanik, Heinecke, Ntalakowski, and Helferich, with the exception that Billroth, instead of closing the peritoneal sac, left it open and drained. Mikulicz advises against packing the rectum after the operation, as he considers that all dressings placed in the lumen of the rectum are superfluous, and under certain circumstances may be even dangerous. He simply

covers the line of sutures with iodoform, and then places a strip of iodoform gauze over this, which is then in turn covered by a wood-wool cushion, which should be changed every day, or oftener if necessary.

Much attention must be directed to keeping the surfaces very clean, and for this purpose a daily irrigation with a mild antiseptic solution, such as boracic or salicylic acid, is of value. Opium should be given internally for about a week following the operation, in order to keep the bowels bound up, and of course the patient must be kept upon a diet that will leave as little intestinal residue as possible.

In the majority of cases recovery after operation for prolapsus recti is simple, and the wound closes in most cases without any reaction; but care must be taken to carefully place the stitches, including tissue enough to prevent them from tearing through. A medium-sized silk is perhaps, on the whole, the best material, but a good chromic catgut may sometimes be preferred. In cases of invagination, silk is perhaps the best material to employ.

If diarrhea should supervene, as it sometimes does, opium in full doses must be exhibited. It is better to keep the bowels confined until about the eighth day, and after this time a daily movement should be obtained. In most cases the passage of the feces will not produce any pain or loss of blood, and only in very few cases will the operation be followed by fecal incontinence, which usually will right itself within a short time. Bladder symptoms rarely complicate the convalescence, but occasionally retention of the urine will occur, which lasts a few days. Union of the wound takes place quite rapidly, and generally the patient may be discharged during the third week.

In some few cases the process of repair may require a somewhat longer time.

In conclusion, Cumston offers the three following propositions:

In the acute types of prolapsus recti and invagination of the colon which are irreducible, and which, at the same time, present other serious general symptoms, such as incarceration, gangrene, or intestinal obstruction, no time should be lost; the surgeon should act at once, and this means that immediate resection should be performed.

In all cases of chronic and irreducible prolapsus recti, although they do not directly threaten life, they should be removed as soon as possible, because at some future time they will probably be a danger to the patient. The chronic irreducible prolapses are very prone to impair the general health of the subject, because they interfere with proper nutrition. Rather frequent and somewhat profuse hemorrhages are likely to occur in these cases, which may be the means of rendering the patient quite anemic; they frequently become incarcerated, and the consequence is either an inflammation of the rectum or even gangrene. Owing to the fact that this form of prolapse is exposed to external influences of a dangerous nature, extensive ulceration, especially at the base of the prolapse, cicatricial stenosis of the lumen of the rectum may occur. And, lastly, a hernia of the small intestine into the prolapse may arise. Now all these dangers can be prevented by an early resection, and the earlier this is done the better, because the patient will be in a far better condition than if the surgeon waits until called upon to operate in haste after some one of these above mentioned complications has set in.

In all cases of chronic reducible prolapsus recti which cannot be cured by milder therapeutic measures, resection is indicated. Cumston strongly advises giving medical means only sufficient time to ascertain if any result whatever is to be obtained by them, because in this form of prolapsus the dangers will become considerable the longer the case is allowed to run. If linear cauterization is tried and remains without result, it had better not be repeated, because cicatricial stenosis will certainly occur.

POSTOPERATIVE VENTRAL HERNIA.

MORRIS (*American Medical Quarterly*, January, 1900) calls attention to the fact that the commonest cause for postoperative hernia seems to be improper suturing of the structures of the abdominal wall. There is no necessity for complicated methods for closing the wound. The peritoneum may be separately sutured to advantage with the finest strand of catgut, and one which will be absorbed in about five days. There are only two muscle groups that can be safely sutured *en masse*—the rectus and pyramidalis in midline operations, and the internal oblique and transversalis in lateral operations. Other muscles need to be separately sutured, for the reason that they have unlike traction lines, and two muscles with unlike traction lines, when approximated with one suture bearing, are prone to pull away from each

other in such a way as to leave points of small resistance to a force from behind.

A separate suture is required for the fibrous fascia layer in midline operations and for the external oblique aponeurosis in lateral operations, for the reason that deeper structures cannot be left as they were found, by a suture which closes deep and superficial layers under one line of bearing. The adipose layer of the abdominal wall requires no suturing at all, no matter how thick it may be, for the resource of atmospheric pressure can be used upon that structure. Sutures extending through the adipose layer set fat free, and the free fat by hydrostatic pressure finds its way along the sutures and into spaces which should be occupied by plastic lymph only. The thicker the fat walls the better they become united by atmospheric pressure if a small subcuticular suture is simply introduced into the skin layer and the cut adipose margins snugly pressed together just before the skin suture is finally fastened. If one has occasion to reopen the abdominal wound for any reason two or three days after the adipose layer has been united under atmospheric pressure, he will have difficulty in separating the walls of the wound in the original line. The advantage of using the subcuticular suture is the avoidance of making stab cultures of the staphylococcus albus, with resulting abscesses, which interfere with firm union of the deeper structures.

Another common cause for postoperative ventral hernia is due to leaving a large drainage opening after operation in septic cases. The use of gauze drainage in an open abdominal wound is now a crude resource that has been superseded for several years, but it is still in vogue, and many ventral hernias are the result.

Morris mentions a case of pyosalpinx with progressive acute pelvic peritonitis, in which he ruptured one pus-tube and scattered the pus over the exposed peritoneum. The wound was closed without drainage, and the patient recovered as well as these patients usually recover, without septic complications.

Too early removal of the sutures was a potent cause for ventral hernias in earlier days. Temporary sutures of silk or silkworm-gut or silver wire were removed at the end of a week or ten days by some operators. This length of time is sufficient after blunt dissection operation, but not where muscles and aponeuroses are cut, excepting in short incisions.

The author states that in most of his appendicitis operations the wound is perfectly firm and safe at the end of eight days, but in these cases he not only uses blunt dissection but also a short incision. There is little injury to the trophic nerves, and the process of connective-tissue replacement of plastic lymph completes the repair in about eight days. No further repair is necessary after lymph has become replaced by connective-tissue cells. The reparative process seems to vary in time in proportion to the length of the wound and the consequent injury to trophic nerves.

The fraction of one per cent of hernias that Morris has been able to trace in his own work have been treated in various ways. One patient who wears a truss had general suppurative peritonitis, and the wound had to be kept widely open because the pus had a tendency to become encapsulated in widely separated collections. Another patient who wears a truss had an extra-uterine pregnancy with the placenta disposed over such a wide peritoneal surface that the oozing required gauze packing and an open wound. In three of his appendicitis cases long suppuration caused imperfect repair of the abdominal wound. In none of these cases would an abdominal supporter have helped matters.

It is not necessary to use any suture material excepting catgut for closing abdominal incisions. Some of the other suture materials are very objectionable.

Buried silkworm-gut knots cause endless annoyance by coming out months or years after they have been introduced. The same is true of buried silver wire. Buried sutures of durable material are unnecessary if used for the purpose of preventing postoperative ventral hernia.

Postoperative ventral hernia is readily curable if one follows the simple plan of dissecting structures apart separately in such a way that they can be separately sutured. *En masse* suturing of the margins of a hernial opening is not a successful method, but the uniting of dissected structures in their normal anatomical position has been accomplished without difficulty, and there has been no return of the hernia. In one case, the author states, where the hernial opening was large enough to admit the closed fist easily, the skin was so thin and so firmly adherent to bowel loops that it could not be separated safely, so he simply cut around the outside of the dome of skin and pushed it together with the adher-

ent bowel into the peritoneal cavity, and then made accurate closure of the wound by separate suturing of peritoneum, muscles, and fascia over the sunken mass. The patient made a good recovery and has no recurrence of the hernia.

Morris states that he has operated upon a number of postoperative ventral hernias much larger even than this one, but it was impossible in the other cases to find a line of cleavage between skin and bowel.

ILIAC COLOSTOMY.

GANGOLPHE (*Revue de Chirurgie*, No. 2, 1900) has for three years employed the method below described, which is simple, rapid, and perfect in its functional results. He has lost no cases. The abdominal incision is made as small as possible, thus lessening the danger of subsequent eventration. The deep part of the wound should certainly not exceed two and a half inches. The sigmoid flexure is hooked up and out, and the mesenteric attachment is well stretched. Through the latter a hemostatic forceps is passed near the intestinal insertion, and in the grip of this instrument is placed a loop of thread, which is drawn back through the mesocolon. By dividing this loop two ligatures are provided which are crossed and tied to the right and left as tightly as possible around the gut. The loop thus strangulated becomes livid. It is separated from the general peritoneal cavity by a sero-serous suture, which includes the peritoneal investment of the gut about half an inch to the inner side of the ligatures. Great care is taken to avoid the mesocolic veins. The abdominal incision is then reduced to its smallest practicable size, and the strangulated loop of gut, which projects in this incision, is enveloped in iodoform gauze. Forty-eight hours later this loop is opened by the galvanocautery, followed by irrigation with boiled water. Each ligature is then cut and withdrawn. The major part of the gangrenous intestine is then removed. The patient will suffer from some colic, which is easily controlled by morphine.

Of sixteen cases thus operated on, none of them vomited. There was some fever, but no symptoms of grave infection. Locally, there was no complication. With the exception of a slight tendency to prolapse noted in two cases, the results were eminently satisfactory. The intestinal contents were evacuated with more or less regularity about twice a day; nor was there any interference with the ordinary occupations. An ordinary tampon, fixed by a belt, prevented leakage.

CANCER OF THE BREAST AND THE RESULTS OF OPERATION.

MCWILLIAMS (*Medical News*, April 28, 1900) has tabulated one hundred cases of cancer of the breast occurring in the Presbyterian Hospital, New York, from January, 1889, to April, 1899.

Marriage, child-bearing, nursing or not, and disorders of menstruation have not been proved to have exerted a causative influence.

The significance of an antecedent trauma is still under considerable dispute. The situation of the breasts exposes them to various forms of injuries. Marriage has been said by some to have a direct influence upon primary cancer of the breast.

The first symptom is the discovery of a hard, not sensitive, painless tumor in the breast. Pain, as a rule, is not at all pronounced till the surface of the tumor has ulcerated, or till enlargement of the axillary glands has occurred, which press upon the branches of the brachial plexus and cause neuralgic pains down the arm. Out of ninety-six cases, fifty-four, or 56.2 per cent, had some local discomfort or ache prior to operation. Cancers of the breast may attain a large size without the slightest twinge of pain. This may be accounted for by the fact that the advancing, invading cancerous tissue paralyzes the nerve filaments with which it comes in contact.

Retracted nipple depends upon the position of the growth, which will not affect the nipple if it be situated on the periphery of the gland. Of seventy-three of the cases, thirty-three, or 45.2 per cent, had retraction of the nipple.

In fifty-one of the cases the right breast was involved, and in forty-nine the left. Right breast, the inner quadrant was involved in twenty-one cases, outer quadrant in nine cases; left breast, inner quadrant in ten cases, outer quadrant in nineteen cases. In the remainder of the cases the tumor was near the center of the gland. In no case were both breasts primarily involved at once.

Out of ninety-eight cases, forty-eight, or 48.9 per cent, had the lymphatic glands in the axilla palpably enlarged. It is imperative in all cases of mammary cancer to remove all the lymph glands in the axilla, even although they may not be palpably enlarged

when the axilla is opened; for even in this case microscopical examination often reveals a cancerous invasion of the glands. Out of seventy-five cases examined microscopically, the axillary glands in fifty-nine cases, or 78.6 per cent, showed distinct cancerous infection. There seems to be no rule as to how long a time elapses after the tumor has appeared in the breast before the glands become involved; hence the absolute necessity for as early an operation as possible after the appearance of the tumor.

Halsted, of Baltimore, urgently insists upon removing the supraclavicular glands. He excises both the axillary and supraclavicular glands in all his cases, and says that the additional time occupied in removing these glands adds nothing to the mortality of the operation.

McWilliams states that cachexia was not a very important symptom, and is not apt to develop early. Fourteen cases only showed any cachexia. The average age was forty-nine years, six months, and twenty-six days.

The incisions were made so as not only to remove the infected skin overlying the tumor, but to get so far into healthy skin as to endeavor to avoid any possibility of cancerous infection. The dissection is then begun in the axilla and the incision carried down to the pectoralis major tendon, under which, when exposed, the finger is passed, and the tendon divided near its insertion upon the finger. The axilla is then laid open by dividing the fascia beneath the great pectoral, and the axillary vein is clearly identified, the situation of which should never be lost sight of, as it is the guide to the whole space. The pectoralis minor muscle is now exposed and its tendon divided and reflected back toward the chest with the entire mass. The removal of the pectoralis minor gives much easier access to the very apex of the axilla, and hence greater certainty of removing infected glands; and as the removal of this muscle makes practically no difference in the function of the arm afterward, it should always be removed. The axillary contents are dissected back from the apex of the axilla toward the breast. This is a better method of procedure than to proceed from breast to axilla in the dissection, in which case the operator is likely to press into the general lymphatic system cancerous cells. The breast, muscles, and axillary contents should all be removed in one piece, since cancerous tissues should never be cut into, nor across, nor removed piecemeal, for fear of spreading infection. The subscapular nerves are preserved, if possible, although if embedded in a mass of enlarged glands they are removed. The whole mass is then cut away from the chest. There is little disability after the removal of so much muscle. The patients complain for a few months of stiffness and weakness, but the arm regains its former strength. The functions are maintained by the anterior fibers of the deltoid and the clavicular portion of the pectoralis major. Should the axillary vein be found embedded in a mass of enlarged glands, a portion of it is divided between ligatures. In this case more or less permanent edema of the arm may be expected. A drainage-tube is generally left in the bottom of the wound for thirty-six or forty-eight hours, as there is usually some oozing. The edges of the wound are brought together as closely as possible by sutures throughout the extent of the wound. This is often facilitated by separating the inner skin edge from the chest for two inches back, which allows this edge to be drawn farther externally. Any defect between the skin edges is allowed to granulate, or if considerable is grafted at the time of the original operation or afterward. Halsted removes so much skin that he is practically never able to approximate the skin edges; to remedy which he always grafts skin at the time of the original operation. After a copious dressing has been applied, the arm is bound to the side by a roller bandage, the forearm and hand being allowed to remain free, which adds much to the comfort of the patient.

It is one of the remarkable facts of surgery that an operation of such apparent magnitude, which is attended by some loss of blood, and which is at times a prolonged one, should be accompanied by such a low death-rate; the few nerves which are cut possibly accounts for the small amount of shock.

Death from sepsis has not occurred. The low mortality-rate leads the surgeon to undertake the operation even in cases where he cannot hope to thoroughly eradicate the disease, for the operation will ameliorate the patient's condition and will prolong life.

The average length of stay of each patient in the hospital was twenty days. Convalescence is very rapid. Of the ninety-two patients who went out of the hospital, statistics have been obtained of sixty-six, and seventeen, or thirty-four per cent, of these were cured.

Halsted published in 1898 his statistics on

cancer of the breast, giving forty-one per cent of cures after three years. Other results of cures after three years are as follows, all published in 1894: Bergmann, 30.2; Billroth, 4.7; Gusselbauer, 16.7; König, 22.5; Volkmann, 14; Bull, 26.6; Curtis, 20.7; Weir, 20; Dennis, 25.

THE TREATMENT OF RACHITIS.

STOELTZNER (*American Journal of Obstetrics and Diseases of Women and Children*, April, 1900) treated eleven cases in private practice with suprarenal extract, observing the children for an average time of three months. He then applied the treatment to about seventy dispensary cases, and concludes that the general condition of rachitic children is greatly bettered thereby, and no untoward results ever occurred. The sweats, craniotabes, delayed dentition, delayed power to walk and sit, general tenderness, restlessness, and vasomotor disturbances are all markedly influenced for the better. Lumbar kyphosis and the softness of the thorax are often improved, while the size of the fontanel, the rosary, and the epiphysial swellings are affected least. Spasm of the glottis and other symptoms of tetany were totally unimproved. The effect of the treatment is often visible in the first week; it then becomes more slow, and often ceases when the treatment is interrupted, to reappear upon its resumption. Even complicated cases are visibly improved. One very severe case died of capillary bronchitis after one month's treatment, and histological examination showed that the rachitic bone lesion was markedly improved.

THE PRACTICAL VALUE OF THE WHITE BLOOD-COUNT IN SURGICAL CASES.

HUBBARD (*Boston Medical and Surgical Journal*, April 19, 1900) notes the results of a careful series of observations conducted upon many cases treated at the Massachusetts General Hospital. He summarizes his studies as follows:

One hundred and eighty-nine non-inflammatory cases, such as cysts, fibroids, extrauterines, tumors, chronic appendicitis, gallstones, etc., were averaged, giving 8811; 71 cases of inflammation not so great as to form pus, with an average of 12,645; and 299 cases of pus formation, with an average of 17,696. These averages show a slight increase from the non-inflammatory to the inflammatory and again to the purulent cases. On the average blood-counts may be of value, but in individual cases in the non-inflammatory group the counts varied from 4000 to 25,800, in the simple inflammatory from 5600 to 32,000, and in the purulent from 4800 to 47,000. The counts that are common to all three lie somewhere between 5600 and 25,800. As most of the counts fall within these limits, they are of no practical value to the surgeon when brought face to face with an individual case, and the blood-count should have very little weight as compared to the physical signs in helping him to the diagnosis.

From the present knowledge of the causes and variations of leucocytosis no deductions may be made which are simple enough to be of any great use to the surgeon at the bedside. Doubtless hidden truths might be discovered by juggling with the above counts, but the paths to them would be too tortuous to follow except for scientific investigation.

The author cites a case, showing how the blood-count may point exactly opposite to the physical signs: An abdominal case entered the hospital on October 16, the second day of illness, with a white count of 19,000, temperature 102°, pulse 108. The abdomen was uniformly rigid and distended. The diagnosis of appendicitis was made. The next day the temperature was 101°, and there was less pain and distention, and yet the blood-count had risen to 26,400. The symptoms were never severe enough to warrant an operation, and the patient recovered.

FOREIGN BODIES IN THE ABDOMEN AFTER OPERATIONS.

KELLY (*American Journal of Obstetrics and Diseases of Women and Children*, April, 1900) offers the following rules to be observed at all operations:

In the first place always commence with a definite number of pieces. Kelly uses seven marine sponges and nine pieces of gauze.

Write down upon a slate or a piece of paper the number of pieces of sponges and gauze in use.

If more are added, it is the duty of the assistant to instruct the nurse to write them down at once or receive from her a statement as to how many she has recorded.

He would, with Boldt, urge the entire abandonment of small pieces of gauze and small sponges.

Avoid packing pieces of gauze up in the abdomen out of sight.

The use of a bit of tape, as recommended by Boldt, attached to the corner of the gauze and left hanging out of the wound with a forceps clasped on the end, makes a safe tracer, although this, too, has failed as an absolute safeguard.

If marine sponges are used, they may be enclosed in a loose gauze bag with a tracer attached; sponges held in long forceps do not need a tracer.

The operator should put the simple questions at the close of the operation, How many pieces of gauze are called for? and How many sponges are called for? These questions should be answered, without circumlocution or explanation, by the simple, direct statement of the numbers wanted. In order to keep the assistants on the alert, and as a means of training them to be extremely careful, occasionally hold back a sponge or a bit of gauze, and do not give it up until they insist it is wanting.

Never under any circumstances should the count be muddled by cutting the gauze or dividing a sponge.

It is Kelly's practice to make two people responsible for the number of pieces used, as well as for their production at the end of the operation; these are the assistant, who handles the sponges, and the nurse. In some clinics, where fewer assistants are used, it will be necessary to place all the responsibility on one head, either nurse or first assistant.

The discarded gauze or sponges must always be thrown into a receptacle, and never, under any circumstances, mixed with soiled dressings, towels, or sheets, or, worst of all, carried out of the room during the progress of the operation.

In addition to all the precautions noted, the surgeon must always exercise his vigilance in taking an exact note of everything that is put in the abdomen, and it may be of service to memory to state aloud, "One sponge introduced into the abdomen," "Two pieces are now in the abdomen," etc.

An examination should be made in all cases to see by actual inspection and by touch that nothing has been left behind. Such an examination will not, of course, be pushed to an extreme unless there is a missing article to be discovered.

CARDINAL SIGN OF COLLES'S FRACTURE.

WARE (*Medical Record*, March 31, 1900) says that in 300 cases of Colles's fracture the much-talked-of silver-fork deformity was present in less than ten per cent of the cases, and its absence is therefore of little diagnostic significance. A better ground of diagnosis depends upon certain fixed anatomical relations. The styloid of the radius is always at a lower level than the ulnar styloid. In ninety-five per cent of Colles's fractures there is impaction, and as a necessary result the radius is shortened and the radial styloid rises to or above the level of the ulnar styloid. This sign is so constantly present as to be the cardinal pathognomonic sign of Colles's fracture, and gives one a reliable guide for complete reduction. This diagnostic point is mentioned by few and emphasized by none of the works on fractures.

A NEW METHOD OF TREATING THE URETER IN TUBERCULAR DISEASE OF THE KIDNEY AND URETER.

PRYOR (*American Journal of Obstetrics and Diseases of Women and Children*, April, 1900) prefers to remove the kidney through the abdominal route. If the ureter is diseased its removal by any other than a blind and clumsy procedure is impossible, except through an abdominal incision. In the case of tubercular kidney with the ureter similarly affected the indication for a complete removal of the ureter is as urgent as it is for the removal of the kidney.

A patient presenting herself with symptoms of tubercular nephritis, the abdomen was opened and the right kidney was found enlarged and nodular, and firmly fixed within its capsule high up, part of it lying beneath the liver. The ureter stood out beneath the peritoneum as a hard cord, and on splitting the peritoneum overlying it, an absence of ureteral peristalsis was found.

After removing the right kidney, the ureter was then freed from its peritoneal covering for the upper half of its course, and was liberated from the pelvic brim to the point above where it was free. It was then drawn out of its bed and held taut in the left hand. Its course in the pelvis was easily seen. It was liberated from its attachments by means of the finger until the pulsations of the uterine artery were felt. The peritoneum anterior to the artery was incised and the ureter drawn in front of the vessel. It was now attached to the bladder only. The ureter was cut off about three-quarters of an inch from the bladder. A long surgical probe was passed into the bladder and through the

urethra. It was firmly held by an assistant. The eye of the probe was sutured with silkworm-gut to the walls of the ureter, using one suture to fasten each side of the probe's eye to the corresponding side of the ureter. By drawing upon the probe, pulling it out of the urethra, the ureter was turned inside out into the bladder. The probe was then bent over the pubes in such a way as to prevent its slipping back, the cut surfaces in the peritoneum were united, and the abdomen closed. The ureter sloughed off, and the probe was drawn out in the third week.

Inversion of the ureter brought raw surfaces into apposition, and union between these ensued, causing obliteration of the inverted tube.

All traces of the ureter thus treated disappeared, except a slight elevation of tissue at the side of the ureter.

HYSTERECTOMY FOR ACUTE SEPTIC METRITIS AND PERITONITIS.

GRANDIN (*American Journal of Obstetrics and Diseases of Women and Children*, April, 1900) concludes that whilst a vast majority of instances of puerperal infection recover under minor operative measures, about one per cent die notwithstanding operative treatment, except where such treatment is resorted to early. On the occurrence of septic phenomena in the puerpera the patient should be subjected to a most thorough physical examination, preferably under anesthesia, for the purpose of differentiating saprophytic and streptococcic infection.

Sapremia (saprophytic infection) yields to local operative measures, except where expectancy has ruled or streptococcic infection has been superadded. In such event major operation may be called for; as a rule, however, at a period remote from the date of initial infection.

When the clinical phenomena are of low grade, in particular where the pulse is rapid in proportion to the temperature—a warning of general systemic infection—sapremia having been ruled out, even though definite focus of infection in the pelvis cannot be located (other sources of systemic disturbance, such as pneumonia, urinary toxemia, etc., having been excluded), exploratory abdominal section is indicated for absolute diagnosis. Thereby early removal of the infectious nidus (be it tube or ovary or uterus, or all) becomes feasible before the system at large has been surcharged with infectious elements, when it is folly to expect aid from surgery of either minor or major type.

These conclusions will hold even though it is recognized that ordinarily we deal, not with pure infection, but with a mixed type, the clinical phenomena varying according to the predominance of one or the other recognized infectious element. It is for this reason that tangible results cannot be expected, as yet, from the serum-inoculation treatment of puerperal sepsis.

The streptococcic type of infection is so exceedingly rare that only exceptionally is hysterectomy demanded in the puerperal state.

THE JUSTUS BLOOD TEST FOR SYPHILIS.

JONES (*New York Medical Journal*, April 7, 1900) has applied the Justus test to thirty-five syphilitic and eighteen control cases. Of these thirty-five syphilitic cases, seventeen were active not under treatment, one was active syphilis under treatment, two were latent cases, eight were cases of chancre with adenitis, seven were cases of chancre without adenitis. Of the seventeen cases of active syphilis not under treatment, thirteen responded and four were negative to the test. Of the thirteen positive cases, twelve had a macular or papular syphilide and a history of chancre, and were tested from three to ten weeks after its appearance; the remaining one had a characteristic mucous patch on the inner side of the cheek, but no history of chancre could be elicited, and the possibility of infection was denied. It is worthy of note that ten days' treatment of this case with unguentum hydrargyri caused marked improvement.

Of the four negative cases, three had a characteristic syphilide, and either a present chancre or the history of chancre. The first, in whom mucous patches occurred in the mouth a month and a half after test, was tested twice by specific gravity method; the second, who had all the symptoms of syphilis, was tested both by specific gravity and Fleischl's hemometer; and in the third the reduction was only three per cent, and the case was therefore not counted. The fourth had a mucous patch and sore throat, but no history of chancre could be obtained.

The author notes that the only case in his list of active syphilis under treatment did not respond to the test, and both of the latent cases were negative.

Of the eight cases of chancre with adeni-

tis, two reacted positively and six negatively to the test. One of the positive cases was tested twice by specific gravity method, and was negative both times, once later by Fleischl's hemometer, and was then positive; the other positive case was also tested by Fleischl's hemometer. The first positive result was obtained six weeks and the second four weeks after the appearance of the chancre. Of the six remaining cases, three were tested at less than four weeks, two at four weeks, and one at an unknown time after the appearance of the chancre.

Of the seven cases of chancre without adenitis, Jones found only one with a positive reaction, the history in that case not being very definite. One of the negative cases, which was pronounced unquestionably chancre, was tested three times, twice by specific gravity method and once later by Fleischl's hemometer.

The control cases — which included five cases of phthisis, one of typhoid fever, one of apoplexy, one of fractured rib, one Colles's fracture, one of drug habit, one of chancroid, and seven of acute alcoholism — were all negative to the test, and two were tested twice.

The Justus test has a value in the recognition of doubtful cases of syphilis, although it is not infallible, as Cabot's case of chlorosis shows (and it is not impossible that other non-syphilitic conditions may be found in which the reaction occurs), but the work hitherto done certainly indicates the great variety of such non-syphilitic conditions. Moreover, the test often fails in two classes of syphilitic cases in which a diagnosis is especially desired—viz., in latent cases and early chancre, and sometimes at the beginning of the secondary stage.

The author states that the limitations as to time and character of the disease—in other words, the range of usefulness of the test—have not been as yet entirely worked out. But in certain cases — of which the case of mucous patch with denied venereal history, and Justus's case of ulcer of the larynx, in which the question was between a syphilitic and tuberculous origin, are examples — the Justus test is of decided weight and importance.

It is almost useless to expect at the present time to increase largely our limited list of pathognomonic signs. The practical possibility is to add to the list of such reactions, as the diazo-reaction in typhoid fever, which in certain conditions are helpful in diagnosis and which have a great positive, though little or no negative, value, and then to find out as accurately as possible what the conditions are.

To this class Jones believes the Justus test belongs, and to the definition of these conditions he states he has tried to contribute.

The Justus test is based on the asserted fact that a single inunction of mercury in all untreated cases of secondary, tertiary, and congenital forms of syphilis causes a reduction in the hemoglobin, due to the sensitiveness of the red blood-corpuscles to the action of the drug, while in non-syphilitics no reaction follows.

Justus says that this reduction follows intravenous and subcutaneous injections as well as inunctions, and that it amounts to from ten to twenty per cent. The administration by the mouth produces no effect on the blood.

Justus reports observations in more than 300 cases of syphilis which gave a positive reaction, and on very many control cases which were negative.

Cabot found the reduction in two negative cases. Justus found the sign in thirteen out of sixteen cases in which only a fresh chancre and inguinal adenitis were present.

It is agreed by both Justus and Cabot that the latent cases and cases which are subsiding, either spontaneously or under treatment, do not respond to the test.

CALCULOUS ANURIA CURED BY NEPHROTOMY.

RAFIN (*Lyon Médicale*, No. 14, 1900) reports another case of calculous anuria cured by nephrotomy. The patient had suffered from nephritic colic fifteen years before the attack which required operation. There was an interval of ten years of health, then the recurrence of the colic, alternating from side to side. The patient, after an attack of unusually severe pain and the passage of some blood, suffered from anuria for four days. The kidney was exposed and found to be enormously congested and thrice its normal size. On incision a large quantity of urine escaped. The patient remained ill for several weeks, but finally recovered.

The author notes the excellent results of operation under such circumstances. He calls attention to the fact that the earlier incision is practiced the better is the prognosis.

THE TREATMENT OF CYSTITIS.

GUITERAS (*Medical News*, April 7, 1900) states that in cases of chronic cystitis two conditions confront us, the cystitis and the cause. In all acute exacerbations of chronic cystitis the disease should be treated on the same lines as the acute variety. Most cases of chronic cystitis will improve if put to bed and given hot sitz baths or hot rectal irrigations, together with urinary antiseptics and large quantities of water internally.

Of urinary antiseptics salol and boric acid are useful, also the oil of wintergreen and the oil of eucalyptus; but when the urine is alkaline, as is usual in obstructive cystitis, nothing equals urotropin in 7–8-grain doses every three to four hours. These measures, however, are merely palliative, and no permanent cure can be effected except by local treatment. In every case great benefit will follow a systematized course of bladder irrigation, either by hydrostatic pressure or by the catheter and hand syringe. The choice of means will naturally be decided by the consideration of convenience, and in this regard the latter method frequently offers more points in its favor. But just as in acute cystitis it is not advisable to pass any instrument into the bladder, so in cases of chronic cystitis in which the symptoms are very acute, as they sometimes are, especially in tuberculosis and stone, it would be unwise to attempt this procedure. In washing out the bladder by either means, simple boracic acid solution may first be used, or even saline solution or sterilized water, followed at intervals by solutions of permanganate of potash or nitrate of silver.

The treatment of cystitis due to extension consists chiefly of meatus irrigation by hydrostatic pressure with a solution of nitrate of silver, 1-to-2000 to 1-to-4000. The bladder having been filled with the solution, the patient empties it in the natural way, and the process is repeated once or twice at each treatment, if deemed advisable. It is usual to give one of the urinary antiseptics, and if there be much tenesmus, hyoscyamus or belladonna.

The treatment of cystitis due to stricture should be directed to the palliation of the symptoms pending the removal of the cause. The restoration of the urethra to its normal caliber throughout will do away with the congestion produced by the increased effort on the part of the bladder to expel its contents, and with the removal of this predisposing cause appreciable gains are made in the attack upon the disease. Whenever the stricture is capable of dilatation this should be brought about by means of sounds, or dilators. Of the latter the Oberländer is the most practical, the least cumbersome, and the least complicated. As it has the same shape as a sound, it can be introduced readily into the urethra and the stricture can be dilated one or more degrees at each sitting, and by the aid of this one instrument the same results may be accomplished as by a set of sounds. The bladder should be washed out after each dilatation by the hydrostatic method with one of the antiseptic solutions already mentioned. Internal antiseptics should be used continuously throughout a course of dilatation, and the instrumental treatment should not be given oftener than twice a week.

If the stricture will not dilate and is so small as to give rise to considerable back pressure, it should be cut, lest the ureters and the kidneys become involved. If it is situated in the anterior portion and will admit an Otis urethrotome, the cutting should be done by means of this instrument. As a rule strictures that give rise to cystitis are small ones, situated in the deep urethra, where this instrument ought not to be used. In these cases, if a guide can be passed, the Maisonneuve urethrotome should be employed, or an external urethrotomy should be performed, upon a grooved guide. When no guide can be passed into the bladder through the urethra, the perineal cannula guide will be found of great assistance in the external operation.

Guiteras favors the external urethrotomy, with bladder drainage for a few days if but one method is to be employed, as in operating with the Maisonneuve a cut is made in a very important part of the canal where there may be a serious extravasation, or a septic process started by the absorption of foul urine or urethral discharge.

The author considers the ideal operation to be internal urethrotomy by the Maisonneuve, accompanied by an external urethrotomy, as the foul urine is thus switched off from the deep urethra by means of the tube, and the frequent irrigation which the urethra is given tends to keep it as clean and aseptic as possible. Previous to such an operation the patient should be kept in bed, should drink large quantities of water, and should receive internal antiseptics and hot sitz baths. The same treatment, with the exception of the sitz baths, should be continued after the operation, and the drainage of the bladder

through the tube in the perineal wound should be kept up for from one to three weeks. Sounds should be passed every other day until the wound has closed, and bladder irrigation given until the cystitis is cured.

Many methods have been devised for overcoming obstruction at the bladder outlet, but have been sifted down to two, or perhaps three, operative procedures—enucleation, the Bottini operation, and the formation of a permanent fistula. In patients with good kidneys and heart, in whom the prostate is large and has a fibroid feel, the best remedy is enucleation, which may be done through the bladder, the perineum, or both. In patients in whom the enlargement is chiefly confined to the third lobe, and in whom the rest of the gland as felt through the rectum appears but little enlarged, although very much indurated, enucleation cannot be performed and the Bottini operation commends itself. By this procedure furrows are burned through the impediment, allowing the emptying of the bladder, and the blood-supply is cut off to such an extent by the searing process that atrophy of the gland takes place. When enucleation and the Bottini operation have proved to be of no avail, a permanent suprapubic fistula may be established for the purpose of drainage.

In the treatment of cystitis due to stone, the stone should be crushed by the operation of litholapaxy and the particles removed through the evacuator, although in this country suprapubic lithotomy seems to be gaining favor. This is due, in a measure, to the fact that vesical calculus is so rare here that surgeons do not operate often enough to become expert in litholapaxy, as in countries in which this affection is common.

The condition of cystitis due to tumor is somewhat rare. In almost every case the proper procedure is a suprapubic cystotomy, the growth, if pedunculated, to be removed by the scissors, if sessile by the curette, and its base cauterized.

Malignant growths are sometimes excised, but this operation presents a large death-rate, and even when it is successful recurrence usually takes place; therefore, in case the urethra is not of sufficient caliber for drainage, palliative treatment by means of a permanent suprapubic fistula is the best that can be done for this condition.

In the treatment of tubercular cystitis, the practitioner encounters a condition that taxes all the resources at his command, and he errs, as a rule, on the side of too much, rather than too little, treatment. Guyon at one time advocated the use of intravesical injections of bichloride of mercury 1-to-10,000, and since then many have been following his advice, but such a solution will rarely cure this disease, while it usually produces an irritation that is almost unbearable.

Nitrate of silver and permanganate of potassium have the same effect. Boric acid and boroglyceride irritate less, but do not seem to possess the power to ameliorate the disease. Recently iodoform injections have been advocated, and the procedure would seem to be founded on a logical basis. Three or four ounces of a five-per-cent solution of iodoform in liquid vaselin is injected into the bladder every two or three days, the patient being instructed to watch the stream when he urinates and stop the flow just as soon as the oil appears. This forms a permanent iodoform dressing of the bladder wall, and in the hands of some of the French surgeons is said to have met with gratifying results.

The author states that he has had better results with borolyptol in this class of cases than with any other remedy which he has employed. This seems to have a powerful germicidal effect, while the fact that it does not irritate the bladder renders it pleasant to the patient.

CANCER OF THE BREAST.

ABBE (*Medical News*, April 7, 1900) states that his own personal experience in pure carcinoma of the breast, confined to his notes of the past fifteen years only and excluding all cases of mammary cysts, sarcomata, adenomata, or adenofibromata, of which there were many, shows thirty-three cases in private and ninety in hospital practice, a total of 123 cases. Not one death from operation has occurred in his long experience. Of the thirty-three private patients, which ought to represent the average of the others, eighteen have been heard of very recently; one survived six years; one, five and a half years; four, four years; three, three years; five, two and a half years; and four, one and a half years. Thus about twenty-five per cent have reached the three-year limit and nearly as many more have approached it.

It does not take more than a few cases passing the three-year limit to inspire an operator with the great value of advanced work, proving to his experienced eye that the disease has started as a local affair and

was at an early stage absolutely under control, and in the latter stages subject to limitations. Such results as three years' immunity are now within the easy reach of all good operators.

Granted that the removal of the apparent disease and its complete eradication are two different matters, the latter of which is not always possible, it still remains proven that the surgical dissection of the extensive lymphatic involvement gives these advantages over non-operation: (1) The pressure of the cancerous masses in the axilla and neck, producing inevitable edema of the arm and extreme neuralgia, is not seen; (2) the cachexia, formerly so distressing a feature of persistent absorption, is now rarely seen even when recurrence ensues. This is equally true in operations for cancer of the stomach, bowels, or rectum; the products of cancer-growth cease to poison the system, and the patient usually acquires and maintains a good color.

Finally, recent experience shows that a recurrence of cancer after operation need not discourage the patient or surgeon. If it be speedily and thoroughly attended to, there is still a strong probability of its eradication, as the recurrence is not a return of the disease, but a continued growth of invisible metastatic foci left at the time of operation.

A NEW METHOD OF PERFORMING PERINEAL PROSTATECTOMY.

FREYER (*British Medical Journal*, No. 2047, 1900) describes a method of operating which is practically that practiced by Dittel. A preliminary external urethrotomy is first performed which permits the introduction of the finger into the bladder, which, with a finger in the rectum, enables the surgeon to define accurately the shape, density, size, and extent of the prostatic growth in a manner that cannot otherwise be accomplished, except, perhaps, by a suprapubic opening—a much more serious proceeding.

The finger can be hooked over the enlarged lateral lobe and the latter pushed well into the ischiorectal wound, thus to a large extent obviating a deep and dangerous dissection.

With the tumor pushed well into the wound the capsule is easily incised and erased, and the cutting forceps and scissors easily and freely applied to eradicate the whole mass.

The finger in the bladder enables the surgeon to feel when the cutting instruments are approaching that viscus, so that he can remove the whole growth, except a thin layer for the support of the mucous membrane of bladder and prostatic urethra, without opening the latter, thus avoiding infection of the wound and the existence of a permanent fistula.

The stout perineal drainage-tube inserted into the urethral wound carries off all the urine and prevents the perineal wound from becoming septic. This operation, of course, is applicable only in certain forms of the disease. It is not suited to cases of enlarged middle lobe projecting into the cavity of the bladder. For such cases prostatectomy through a suprapubic opening is undoubtedly the best. The incision for the operation which Freyer describes begins with that for a perineal urethrotomy. It is then extended backward round the anus to the coccyx on the right side. The dissection is carried deep into the ischiorectal fossa, the rectum being carried inward by a broad retractor. The left forefinger is then passed through the urethral wound into the bladder and hooked around the tumor, after which the removal of the prostate is easy.

REMOVAL OF THE SUPERIOR AND MIDDLE CERVICAL GANGLIA OF THE SYMPATHETIC FOR MYXO-FIBROMA.

BURGHARD (*Medical Press*, No. 3176, 1900) operated upon a patient for the relief of severe pain attended with nodulous swelling along the course of the occipital nerve. There was, in addition, a soft tumor about the size of a walnut in the anterior triangle of the neck on the right side just above the bifurcation of the carotid. This was supposed to be a gland. On exposure by incision, this tumor, which was extremely soft and compressible, bulged forwards from behind the internal carotid and the jugular vein, separating these structures and protruding between them. These vessels were carefully separated, and the tumor was exposed as an ovoid structure about three inches in its vertical diameter, and one and a half inches transversely, and considerably flattened from before backwards, lying upon the longus colli muscle and the transverse processes of the second and third cervical vertebræ. As the tumor was cleared, a stout cord prolonging it downward was defined, and this was traced down to another tumor about the size of a hazelnut, similar in character to the first. From the upper tumor

a series of filaments were found passing forward, backward, and upward, corresponding with the connecting branches of the superior ganglion of the cervical sympathetic. It became evident that the upper tumor was the ganglion itself, whilst the lower was the middle cervical ganglion. These two tumors were removed, when the pupil of the same side contracted very markedly. There was also slight ptosis.

The tumor proved to be a pure fibromyxoma. The pain was so completely removed that the patient refused to have the tumors on the occipital nerve operated on. There was slight contraction of the pupil, well marked ptosis, and slight prominence of the eyeball. The patient complained of headache a few days after the operation, but there was little or no dilatation of the cutaneous vessels of the face.

THE SURGICAL ASPECT OF VOMITING.

BENNETT (*British Medical Journal*, No. 2047, 1900), writing on this topic, first considers vomiting which occurs in connection with operation. This, he says, is mainly of two kinds—namely, that which is the result of the administration of an anesthetic, and that which is the outcome of a disease from which the patient is suffering. The vomiting occurring immediately after operation is usually attended with very little danger or trouble, but not infrequently it may occasion bronchopneumonia. This is particularly the case after abdominal operations. Under such circumstances—*i.e.*, when the stomach and upper bowel are likely to contain decomposed and foul material which may by aspiration inflame the lungs—operations should be preceded by preliminary lavage of the stomach. This procedure is also advisable when patients give a previous history of having suffered from obstinate, persistent, and exhausting vomiting, following the administration of an anesthetic. Delayed vomiting, that coming on ten or twelve hours after operation, is usually much more serious in import than that following hard upon the ether. The best treatment for this form of vomiting is gastric lavage.

In regard to fecal vomiting the author states that this occurs more commonly than is supposed in cases in which no mortal disease exists; that though it is a grave symptom it is not always followed by death, even though no surgical intervention be attempted. In certain cases it is even curative, inasmuch as it empties the bowel and stomach of accumulated contents which for the time being are unable to find their way downward in the normal way. The gravest associated symptom is persistent increase of abdominal distention. When this is noted the condition may be regarded as a mortal one if not relieved. If, on the other hand, with the continuance of the vomiting there is no increase of distention, there is reason to hope that active interference is unnecessary and that recovery may follow the casting off of the complaint.

OPERATION FOR PERFORATED TYPHOID ULCER EIGHTEEN HOURS AFTER PERFORATION.

LOWER (*Cleveland Medical Gazette*, April, 1900) reports the case of a patient twenty-eight years old, who suffered from severe sudden pain the third week of her attack of typhoid fever; with rapid pulse running to 160, no drop of temperature, respirations 32, distention of the abdomen, tenderness, and absence of board-like rigidity. Eighteen hours after perforation the abdomen was opened. Large quantities of fecal matter were found free in the peritoneal cavity. The ulcer was found fourteen inches from the ileocæcal valve and was closed. The patient lived sixty hours after the operation.

Reviews.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science. By Leading Authorities in Europe and America. Edited by Thomas L. Stedman, M.D. In Twenty Volumes. Volume XIX.
New York: William Wood & Company, 1900.

The appearance of this, the nineteenth, volume of this monumental work reminds us that it is nearly completed, and we presume that the next few months will see the twentieth and last volume laid before the profession. The present volume is somewhat larger than some of its predecessors; it contains almost 850 pages, and is devoted entirely to the subject of malaria and microorganisms. By far the largest part of the book is taken up by the article on "Malaria," by Marchiafava and Bignami, both of whom have done such excellent work in studying malaria in Italy, and both of whom are attached to the Institute of Pathological Anatomy in the University of Rome. When we recall the fact that these

two investigators have not only done such excellent work, but that Marchiafava was one of the pioneers in studying the malarial organism, it is easy to see that the editor has taken particular pains to obtain for his work perhaps the greatest living authorities upon this subject. As may be imagined from what we have said, these authors deal with the whole subject of malaria and the parasites producing this disease in a most exhaustive manner, and conclude their article by quite an exhaustive bibliography. We note with interest that the action of quinine upon the organisms of tertian fever is, according to Golgi, not identical with its action upon parasites of quartan fever. The difference lies in this, that the tertian parasites are more easily influenced by the quinine in their endoglobular condition than are those of the quartan in the same stage. We also learn that in simple tertian and quartan fevers, and also in the double quartan fever, especially in recent infection, it will be useful to give a dose of quinine at the end of the attack and repeat it six or four hours previous to the hour at which the other attacks usually began. The first administration at the end of the attack is justified by the knowledge of the fact that quinine also acts upon the young endoglobular parasites, especially those of the tertian type, and that when the drug is given during the life cycle of the parasites, although it may not prevent the attack, it will at least make it milder, shorter, and even abortive in its type.

Another interesting division of this article is upon quinine poisoning, in which the untoward effects of this drug, as recorded by Italian, French, and Greek physicians, are discussed. Notwithstanding the considerable number of papers which have been written upon quinine hemoglobinuria in the United States, no reference whatever is made to any American literature concerning this subject. The treatment of malarial hemoglobinuria is largely symptomatic, and consists in the administration of stimulants and oxygen when cyanosis and dyspnea are present, and opium and chloral to combat the agitation. In some cases chloroform may be used. Purgatives have been recommended, but it is difficult to see how they can do good. The authors fully appreciate the difficult position of the physician who finds that quinine does harm during the paroxysms of hemoglobinuria, but do not suggest any efficient measures to take the place of this drug.

In looking over the bibliography which is appended to this very exhaustive article, we regret to see that so little attention is paid to American contributions on this subject; but we are pleased to note that the work of Thayer and Hewetson has been carefully gone over.

Following the article of Marchiafava and Bignami is one by Professor Simon Flexner, of Philadelphia, upon "Microorganisms," in which he reviews this subject from a historical standpoint, and also from the standpoint of the modern bacteriology of to-day. It is hardly necessary to point out that an article of this character from the pen of Professor Flexner is at once a valuable summary and clear statement of old and new ideas concerning bacteria.

The volume closes by an article upon "Microorganisms and Protozoa," by Dr. Eugene L. Opie, of Baltimore.

CONTRIBUTION FROM THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA.

The University of Pennsylvania Press, Philadelphia, 1900.

This is a handsome royal octavo publication of nearly five hundred pages, composed of a number of communications to scientific medicine made by workers in the Pepper Clinical Laboratory of the University of Pennsylvania. It opens with a valuable and interesting article detailing two cases of muscular dystrophy with necropsy, one of the facio-scapulohumeral type reported clinically by Duchenne of Boulogne, and by Landouzy and Dejerine. Microscopic studies of these cases were begun by Dr. Spiller, who writes the article, in the laboratory of Dejerine at the Salpêtrière of Paris, and were finished in the Pepper Clinical Laboratory. The account was read at the twenty-fifth annual meeting of the American Neurological Association, in June, 1899. This article is distinguished by characteristics which have marked all Dr. Spiller's contributions to neurological literature, namely, careful thoroughness as to microscopical details, equal thoroughness in regard to bibliographical references, and cautious scientific statements in every respect. The second article is another by Dr. Spiller upon a case of amyotrophic lateral sclerosis in which degeneration was traced from the cerebral cortex to the muscle. This is followed by another by Dr. C. J. McCarthy upon a contribution to the study of iron infiltration in the ganglion cell, and upon forced movements due to cellular degeneration of the cerebellum following rattlesnake poisoning. The fourth

article is by Drs. Taylor and Sailer upon a fatal case of sulphonal poisoning. To this article is appended a good bibliographical list of the fatal cases of sulphonal poisoning so far on record. It emphasizes the fact already well known to therapeutists, namely, that while sulphonal is a good hypnotic, when given in a moderate dose, it is not a safe hypnotic if continued for a very long period of time. Among other papers that strike us as being of particular interest is one by Dr. Charles H. Frazier upon an experimental study of the etiology of appendicitis, and still another upon the clinical methods for the estimation of milk proteid by George Woodward.

THE MEDICAL ANNUAL AND PRACTITIONERS' INDEX. A Work of Reference for Medical Practitioners.
New York and Chicago: E. B. Treat & Company, 1900.

The Medical Annual is very well known to the medical profession of America and England because editions of it are gotten out each year in these countries. The American edition is a reprint of the British edition. The present volume is arranged on exactly the same lines as its predecessors, which have been presented to the profession now for a period of about fifteen years. The contributors who have summed up medical literature for this publication during the past year are well known men on both sides of the Atlantic. The illustrations do not seem to us to be of as good a quality as those which have appeared in earlier issues, but perhaps we have been unfortunate in receiving a copy which is not equally good with most of the other copies composing this edition. In addition to the illustrations in black and white there are a number in colors, and those in colors are, curiously enough, better than those which are plain.

PROGRESSIVE MEDICINE, Volume I, 1900. A Quarterly Digest of the Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D.
Philadelphia and New York: Lea Brothers & Co., 1900.

This Quarterly Digest, which has now been before the medical profession for about twelve months, begins its second year with an interesting volume dealing with many practical subjects in medicine and surgery. The reader will not fail to be struck with the excellence of Dr. Da Costa's references to diseases of the mammary gland in his article upon Surgical Conditions of the Head, Neck, and Chest, and with Dr. Packard's careful investigation of the antitoxin treatment of diphtheria, and his authoritative statement summing up the consensus of opinion as to the proper methods of treating typhoid fever. It will be remembered that Dr. Blackader, of Montreal, contributed to the corresponding volume of last year an article on Pediatrics, which was of very great interest, and his chapter this year exhibits the same painstaking practical qualities. There are other articles in this volume—by Dr. Hektoen, on Pathology; Diseases of the Larynx, by A. Logan Turner, of Edinburgh; and on Otology, by Dr. Randolph, of Baltimore—which are of practical use.

NERVOUS AND MENTAL DISEASES. A Manual for Students and Practitioners. By Charles M. Potts, M.D. Illustrated.
Philadelphia and New York: Lea Brothers & Co., 1900.

This is another one of Lea's series of pocket medical text-books, and is written by a practitioner who has had large experience in nervous diseases in connection with the hospital of the University of Pennsylvania. It does not profess to be an original contribution to neurology or diseases of the mind, but is largely a compilation of the various facts which are usually recognized by neurologists and alienists. As far as we have been able to observe, it fulfils all the duties that such a volume should fulfil, in that it presents to students rather than practitioners a useful summary of present knowledge concerning these disorders. The low price of the volume puts it within the reach of every one, namely, $1.50.

DISEASES OF THE NOSE AND THROAT. By J. Price Brown, M.D., L.R.C.P.E.
Philadelphia, New York, and Chicago: The F. A. Davis Company, 1900.

We have had occasion within the last few months to review a number of the more recent books on diseases of the throat and nose, some of them new volumes, and others new editions of old ones. We confess that we have looked through the pages of this one without being able to find any good reason for its existence. The teaching which it contains is, so far as we have observed, correct, but we have not seen that it possesses any marked originality, and the author himself gives credit to most of the well known books upon diseases of the nose and throat in his preface for a large amount of the information which the book contains. Some of the colored plates which illustrate the work are not particularly good. To those who de-

sire a short book which deals clearly with these subjects we can commend it, but we believe there are better ones which can be obtained for the same price.

ILLUSTRATED SKIN DISEASES. An Atlas and Text-book. By Wm. F. Gottheil. Portfolios 12 and 13. New York: E. B. Treat & Co., 1900.

With these portfolios this excellent atlas and text-book on Skin Diseases comes to a close. We have already referred to the previous portfolios in such laudatory phrases that it is unnecessary for us to repeat them. All we need say at this time is that the concluding portfolios maintain the high character that was to be seen in the earlier ones. It is to be remembered that in one of our previous reviews we spoke of this series as being a first-class practical one for the general practitioner, and all we can do at the present time is to reiterate our previous statement.

A DICTIONARY OF THE TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES. By Richard D. Hoblyn, M.A. Oxon. Thirteenth Edition, Revised Throughout with Numerous Additions, by J. A. T. Price, B.A., M.D. Oxon.
Philadelphia and New York: Lea Brothers & Co., 1900.

Hoblyn's Dictionary of Medical Terms has been before the profession for many years, and it is hardly necessary at this point in its career for us to review it. It seems that our only duty is to call attention to the fact that another edition has appeared, which is an indication of the fact that having been carefully revised in each edition it still meets many of the needs of the medical profession. The type used in this volume is unusually good for a dictionary of its size.

DISEASES OF THE GENITO-URINARY SYSTEM. A Thorough Treatise on Urinary and Sexual Surgery. By Eugene Fuller, M.D.
New York: The MacMillan Company, 1900.

This last contribution to the literature of genito-urinary surgery is a welcome one because of the practical and thorough way in which Fuller has treated the subjects considered in his work. It is written from the standpoint of the surgeon rather than from that of the venereal expert. It represents the author's own views, founded on his wide practical experience. It is written in his characteristic direct and forceful manner, and is distinctly helpful even to those who differ from Fuller in both choice of operation and operative technique.

The book is thoroughly commendable and deserves a cordial reception.

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., M.R.C.P. LOND.

We have previously called attention to the extremely interesting series of letters from the war in the current numbers of the medical journals. All who are in any degree interested in military surgery will find in them abundant food for reflection. Sir William MacCormac and Mr. Treves have already returned, and we are to enjoy listening to the experience of the last named at the next meeting of the Royal Medical and Chirurgical Society. We cannot but feel some regret that a few of our leading physicians have not been accorded the same advantages as have fallen to the lot of so many surgeons; for instance, there must be much to learn in the aggregation under special conditions of so large a number of cases of enteric fever and dysentery. We gather that the general conclusion arrived at on the question of antityphoid inoculation in the present war is that it does not diminish the liability to the disease, but that the attack runs a course decidedly less severe and is less prone to complication. This conclusion is, of course, directly at variance with Wright's Indian statistics, which showed an enormously diminished incidence on the inoculated. Another point has been clearly brought out, that open-air treatment under canvas is far more successful than treatment in permanent wards. It is curious how unwilling the profession at large is to admit the sufferers from various diseases to the most potent and most readily obtained of nature's remedies. For the time being fresh air has been appropriated by the laity to the cure of pulmonary phthisis, but perhaps the day may not be far off when this simple remedy may be the remedy for anemia, dyspepsia, neurasthenia, and the thousand and one minor ailments to which flesh is heir.

Another conclusion of some importance from the enteric fever hospitals is that while drugs do not favorably affect the course of the disease, they are all-powerful for harm: neither salol, nor quinine, nor Yeo's chlorine and quinine appear to have any special influence on the course of the disease. With regard to the last named remedy be it remembered, however, that its author only

claimed for it a direct influence on the conditions directly induced by intestinal sepsis. On the other hand, the frequent administration of small doses of calomel and magnesium sulphate has been found decidedly dangerous, provoking collapse, and now and again uncontrollable diarrhea. Monsonia ovata, given in the form of a fresh tincture, has proved of much value in the treatment of diarrhea and hemorrhage. Curiously, my knowledge of the efficacy of this drug extends back over some years, and did not then arrive from an academic source; it goes back as far as the time when Portugal robbed American and English shareholders of their property in the Delagoa Bay Railway. The station-master of Delagoa Bay, for want of employment, set himself to investigate Kaffir medicines, and among other work issued in 1887 a pamphlet on monsonia, he himself having then prepared it and used it for some years in the treatment of diarrhea and dysentery. I have in hand a letter from this gentleman of April of last year from Cape Colony, in which he writes: "Tinctura monsoniæ can now be obtained from several wholesale chemists in the Colony, but you will find it worthless, as it is not prepared from the right plants. Several chemists have been preparing a tincture from *Monsonia Ovata* (herb), that being the only variety known and easily obtained; it is known by the Hottentots and Kaffirs as 'Keita,' and grows in abundance along this coast. This plant, as far as dysentery is concerned, is completely worthless. The plant I use does not grow within 300 miles of this coast. The family of Monsonia has nine varieties, and it is only one of these varieties that has any influence on dysentery." In 1892 Dr. Maberly set out on a quest for a plant which he had seen successfully used by the Kaffirs for dysentery. He succeeded in finding it in abundance on the Vaal River, and gave it the name *Monsonia Ovata*, on the authority of an eminent botanist. In 1897 he published a series of cases of dysentery treated with marked success by an alcoholic tincture of this plant. He also found the plant in the Zoutpansberg district of the Transvaal, and on the Bembize River in Matabeleland, about twenty-five miles from Buluwayo. The point of immediate interest is whether the tinctura monsoniæ ovatæ now in use is in reality the same plant as our layman's "monsonia," or whether a more efficacious remedy has escaped identification. This monsonia preparation is now also in use in the treatment of dysentery, after a previous course of magnesium sulphate.

The treatment of syphilis is such a trite subject that one hardly dare retraverse the well worn path. However, we were tempted to sit at the feet of Mr. Jonathan Hutchinson at a recent meeting of the London Polyclinic to see what might be extracted from his unrivaled experience. We found him of course "plumping" for mercury, given in small doses for a long period without interruption. With regard to dose he recommends one grain of gray powder in pills, three times a day for a week, then four times a day, and at the end of a fortnight five times a day. A quarter-grain of opium may be added to the pill to prevent diarrhea, and the patient enjoined to persist in this treatment for a year. He sometimes gives tonics of iron and quinine in mixture at the same time as the mercury pills. He uses iodide of potassium only in tertiary syphilis, but directs that it should be given in a separate mixture and not combined with a mercurial. We fancy these are the lines pretty generally adopted in present-day practice in this country, but there are of course very many advocates of the plan of giving mercury for the longer period of two years with occasional interruptions. Hutchinson claims for his own system that in nineteen cases out of twenty, when mercury is given in his manner from the fourth or fifth week after infection, and is persevered in for a year, no further symptoms appear.

We referred in a recent letter to the treatment of eclampsia by saline infusion. Dr. Jardine recently contributed a further communication on this subject to the Edinburgh Obstetrical Society. He uses an injection consisting of a drachm each of sodium acetate and sodium chloride to the pint of warm water, and as a rule gives ten minims of veratrum viride tincture along with the injection. Allowing for deaths due to incidental causes, his record worked out at only four deaths in twenty-one cases; this in itself is noteworthy, but far more so when one bears in mind the condition in which the majority of these cases are admitted to hospital treatment—all or nearly all are *in articulo mortis*. As to the question of risk in giving these large injections he believes that there is none, provided rigidly aseptic precautions are observed. In no single case had an abscess occurred.

Mr. Jones of Liverpool, and Mr. Tubley of London, have recently carried out their

promise of two years ago to give the Clinical Society an opportunity of seeing the remote consequence of the forcible reduction of the deformity of spinal caries. In their initial communication they had shown that the forcible reduction was not attended by danger to life, either directly by paraplegia or indirectly by dissemination of tubercle bacilli, and that it was perfectly possible to lessen and even to obliterate the curvature. The further history of the treatment was illustrated at the recent meeting by showing several of the patients to the society. These patients were still subjected to spinal support by instruments, so that whatever judgment is now passed on the treatment, we must await a further stage at which it may be seen how they will fare, whether the spine will again bend when its support is withdrawn. They propose to maintain the after-treatment for not less than three years. They enumerate the following contraindications to the procedure of forcible reduction: (1) Cervical and high dorsal curves, unless associated with paralysis; (2) ankylosed spines; (3) large and angular deformities; (4) evidence of tubercle elsewhere; (5) children under two years and adults over twenty years; (6) the existence of abscess except in the presence of paraplegia. This rather formidable list of contraindications serves to show the honest spirit with which the authors have handled a very difficult question. On the whole the general verdict of the meeting seemed to be that the procedure was not to be condemned on the score of danger, but that equally good results might be obtained by instrumental measures with the assistance also of time.

The Hunterian Society held a symposium on the Therapeutics of Gout. We fear that very little was contributed to our very inadequate stock in trade of remedies; even the association of uric acid with the gouty state came under suspicion. Dr. Ross gave his opinion that goutiness is induced by abnormal disintegration of proteids, chiefly caused by hepatic inertia, and that the initial difficulty is a digestive one. Conformably with this view he adopts the traditional treatment with mercury and colchicum, and strict regulation of diet. Differing from Luff and Roberts, he employs soda salts, and has never seen an instance in which they have caused paroxysmal gout. Luff declared against salicylate of soda for gout. Few will be found to concur in this pronouncement, though no doubt some cases of rheumatism are wrongly diagnosed to be gout, and the two diseases are often inseparably associated. Luff agreed with Ross as to the malign influence of hepatic torpor, and fancied that in the case of wines and beers this was attributable to ethereal salts, which certainly affected hepatic metabolism, and possibly that of other organs. Dr. Fox's balneological experience led him to the conclusion that eliminative treatment was the panacea for all phases and phenomena of gout. Dr. Harris spoke feelingly of the usefulness of collodion as an application to the inflamed joint for the relief of heat and pain; there is no question of its power to effect these ends, and its power is enhanced by the addition of a drachm of ichthyol to the ounce of collodion, but we doubt whether the recovery of the patient and his avoidance of complications is furthered by this method.

PARIS LETTER.

By R. H. Turner, M.D. (Paris).

The season for the Exhibition has opened, and crowds of tourists are invading Paris from every quarter of the globe. A large number of medical men are expected for the months of July and August, and I have thought it advisable to give a few hints to American physicians who are thinking of undertaking the journey.

It is a well known fact that the steamers are crowded with passengers, and it is supposed that the traveler has already secured his passage to one of the European ports.

It is advisable to write in advance to engage rooms in some hotel or pension, else one may find oneself stranded in a large city with no knowledge of where to find decent sleeping accommodation. The choice of the quarter where one wishes to establish oneself depends in a great measure on the amount one wishes to spend and the specialty one is interested in. Of course, the most delightful part of Paris for a foreigner is the Champs Elysées quarter, but it is rather distant from the large hospitals, with the exception of the Beaujon, where one can visit in the morning the services of the well known surgeons Berger and Bazy, the latter a specialist in urinary affections, and who vies with Guyon and Albarran in celebrity. The important operations in the service of Dr. Bazy take place on Tuesdays, Thursdays, and Saturdays, at about half-past nine o'clock. The best two medical services in this hospital are those of Dr. Debove, professor at the Faculty of

Medicine, and Dr. Fernet, whose special days are Tuesdays and Saturdays, at nine o'clock.

On the other hand, the medical man staying at one of the large pensions or hotels of the Champs Elysées, will be readily able, by taking the boat at the Pont de l'Alma, to go down the Seine to the Rue de la Convention and visit the finest French hospital—the Boucicaut Hospital, a description of which has already been given in a preceding number of the THERAPEUTIC GAZETTE. Profes sor Letulle, chief physician of the hospital, has transformed one of his wards into a sanatorium for consumptives. Dr. Gerard-Marchant is a good operator, and his service is well worth a visit. As for Dr. Doléris, the accoucheur, his name is well known in America, and the maternity, if not the largest, is undoubtedly the most perfectly built in France. The central laboratory, the kitchen, and the underground passages should be visited. By handing in one's card, one is put in charge of an employee of the administration, who shows the whole building. The hospital should be visited in the morning, as one is then able to see an operation or two, or follow the service of Drs. Doléris or Letulle.

If, however, the visiting physician is a neurologist, he will find that the Salpêtrière is at an hour's distance, though the ride on the river is most delightful at this time of year, and, if time is of no consequence, worth the trouble. Dr. Raymond, who has succeeded Charcot, lectures on Tuesdays and Fridays at ten o'clock, and presents a certain number of interesting cases. On other days he holds consultations, which may be attended by medical men, and which are held in his consulting-room. The Salpêtrière is a very large establishment, but the *concièrge* will give one a few directions, which will amply suffice. Dr. Déjèrine, whose name is undoubtedly well known by your readers, is also at the Salpêtrière, and his service can be attended.

If mental diseases are of more interest the Asile Ste. Anne should be seen, and Dr. Magnan's service asked for.

For surgeons there are a number of services to visit, chief among which are the following: General surgery—Dr. Ricard at the St. Louis Hospital, Dr. Lejars at the Tenon Hospital, Dr. Walther at the Maison de Santé Dubois, Dr. Quénu at the Cochin Hospital, Jalaguier at the Hospital des Enfants-Assistés, and Delbet in Le Dentu's service at the Necker Hospital. In gynecology, the men who are best known at present are Dr. Richelot at the St. Louis Hospital, Dr. Segond at the Salpêtrière, Dr. Pozzi at the Broca Hospital, Dr. Bouilly at the Cochin Hospital, and Dr. Doléris at the Boucicaut Maternity Hospital. Dr. Terrier, whose name is well known by Americans, is now at La Pitié, as he has become a professor of surgery, thereby not being obliged to retire from the hospitals, as he would have had to do if he had remained simply surgeon in the hospitals.

In the medical line the following services are very much sought after by foreigners: Dr. Dieulafoy at the Hôtel Dieu, Dr. Potain at the Charité, Dr. Chauffard at the Cochin Hospital, Professor Grancher at the Enfants-Malades Hospital. Drs. Moizard and Sevestre are also very good services to be seen at the last named hospital. Dr. Sevestre has a special diphtheria service. Dr. Huchard, who, like Potain, is a heart specialist, is at the Necker Hospital; Dr. Faisans, who with Dr. Fernet is among the most reliable men for auscultation in Paris, is at the Hôtel Dieu; and lastly, Dr. Robin, who has acquired fame through his therapeutic works, is at the Pitié.

A skin specialist would naturally gravitate toward the St. Louis Hospital, where he would be able to see Dr. Fournier at his consultation on Saturday morning, and Dr. Du Castel on Saturday afternoon at two o'clock (there being a lecture on skin diseases after the examination of patients). Some days there are as many as three hundred patients examined in the morning at the out-patient department. Dr. Tennesson has his consultation on Tuesdays. Dr. Sabouraud has his own special establishment for the treatment of ringworm and scalp affections. The children are taught and treated at the same time. The laboratory is one of the finest in Paris. One of the best skin specialists in Paris is Dr. Brocq, whose service is at the Broca Hospital. The only disadvantage is that one is obliged to get there at half-past eight so as to get near enough to see the patients. Dr. Brocq speaks at length about each patient of importance in a most interesting manner, and the visiting physician should attend his service, the visit of which takes place at half-past eight on Mondays, Wednesdays, and Fridays.

For midwifery, Professor Pinard's service, and that of Professor Budin, are the two great establishments where foreigners congregate.

I will now speak of what is of interest at

the Exhibition. There will be two things to interest the visitor—the exhibits and the Medical Congress. At this present time the exhibits are still in a rather chaotic state, but little by little everything is getting straightened out, and soon order will be established. Of course, each country will send whatever is representative of its own excellence, and France, being well known for the fineness and cheapness of its surgical instruments, will occupy an important position in this respect. The section devoted to this branch will be at Champs de Mars undoubtedly, and in my next letter I shall try to give a description of what there is most salient in this exhibit.

The Medical Congress is placed under the presidency of Professor Lannelongue, with Dr. Chauffard as general secretary, and the executive committee is composed of Drs. Bouchard, Bouilly, Brouardel, Dieu, Gariel, Le Dentu, Malassy, Nocard, Raymond, Rendu, Roux. Dr. Duflocq, of the Pasteur Institute, is named treasurer. Drs. de Massary and Weber are secretaries. There are five large sections in this congress. The general assemblies will be held in the large amphitheater of the Sorbonne on the 2d, 5th, and 9th of August. For the various sections the halls used are those of the Faculty of Medicine, the Law Faculty, the School of Pharmacy, the College of France, the Sorbonne, the Pasteur Institute, the Amphitheater of the Assistance Publique, and the Val de Grace, which are all included in the same zone. The ophthalmological section will go to the Hôtel Dieu, where there is a special clinic; the dermatological and syphilographic section will hold their meetings at the St. Louis Hospital, which has a world-wide reputation on account of its museum, and where there will be an exhibit. The urinary section will be installed at Necker, where there will also be a special exhibit.

To assist at the congress the following method should be pursued: An American physician, for instance, should send a letter asking to take part in this or that section and forward a check (of $5.00) for the subscription. He will thereupon receive a letter containing a receipt, his card as member of the congress, which should be preserved with the greatest care, and his railway ticket. On arriving at the frontier the ticket should be stamped, and he should note well that he must leave by the same station if he wishes to profit by the advantages accruing from the use of the ticket. On arriving in Paris he should go as soon as possible to the Faculty of Medicine, Ecole Pratique, in the Rue de l'Ecole de Médecine. The porter will show where he can find a secretary speaking English. His railway ticket is stamped, and a ticket is given him with various indications as to the programme followed out by the congress, the insignia, the cards of invitation, the list of places of reunion. Two pamphlets are also given. One of them describes the work of the Assistance Publique in Paris, the other indicates the precious therapeutic resources of the French mineral waters, which, one must admit, are much less advertised and understood in America than the waters of other countries, where they know how to reap commercial advantages in scientific subjects as well as in industrial concerns. On leaving a member of the Medical Congress will receive his railway bond, marked at the bureau of the Medical Congress, and a railway ticket will be given him *gratis*. There will be an official reception by the President of the Republic, by the President of the Council, a large night festival offered to the members of the Medical Congress in the gardens of the Luxembourg. All the efforts of the committee named will tend to render this congress one of the most important.

In connection with this I must speak of a new medical institution which has existed in Paris about four or five months—the Paris Medical Club. This club has been organized thanks to the energy and perseverance of Dr. Doléris, accoucheur of the Boucicaut Maternity, and its members are among some of the most noted medical men in Paris. The president is Dr. Pozzi, who is not only a celebrated gynecologist, but also a senator. Dr. Doléris is general secretary. This club is in reality a section of the National Club, situated 5, Avenue de l'Opéra. There is a special secretary named, who will be charged with furnishing information to foreign physicians. Article 12 of the statutes is of interest to strangers. The latter can have their names put down at the club on being presented by two members. This should be accepted by a special committee of five members. The club will be free for their use during their sojourn in Paris. This temporary admission is good for thirty days and can be renewed for the same period. The demand for admission should be made eight days in advance. An indemnity of ten francs is all that is requisite. All expenditure, such as dinners, lunches, etc., should be settled for immediately. The dinner costs five francs and the lunch somewhat less

In view of the Exhibition a special committee will be formed, who will see to renting or reserving apartments for physicians visiting the Exhibition. I have had occasion to see the interior of the club, and it is fitted up in very good style. Various social gatherings take place once or twice a month, when singing and similar entertainments are given.

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*WRITE THE FORMULA ON THE LABEL.**

To the Editor of the THERAPEUTIC GAZETTE.

SIR: In reply to your letter, I would say that Dr. B. F. Stahl courteously invited me to be present at the meeting of the Philadelphia County Medical Society on the occasion of the reading of his paper entitled "Put the Formula on the Label." I could not agree with Dr. Stahl's views for the following reasons:

First, it is not wise or expedient to educate patients in self-medication. When a patient finds that the treatment of the physician is beneficial, his natural conclusion is that it is due entirely to the medicine. Later on, when he finds some of the symptoms returning, he naturally reasons, "Why should I ask the doctor to call when I can simply get the prescription renewed at *any* drug store, and treat myself and save the doctor's fee." Not only does he do this, but he tells his friends whom he imagines are suffering from the same trouble to get this wonderful medicine, and thus is self-medication and amateur prescribing vastly furthered.

Secondly, sparing trouble to the busy practitioner by ordering the pharmacist to copy the formula on the label, while apparently saving time, produces a bad impression on the patient, for he naturally concludes that the doctor must have a very bad memory, or else is too busy to give his case that special attention which every patient demands as a right.

Thirdly, the plan of using a carbon copy in writing prescriptions is an excellent one, for it enables the physician to keep his own records of what he has prescribed, and impresses the patient with the care and accuracy of the practitioner, and furthers the idea that the doctor is taking special pains with that particular case.

Fourthly, the notion that pharmacists oppose the practice of copying the formula on the label because they are lazy, or object to the increased labor without compensation, is not generally well founded. The majority of pharmacists fully realize that failure to comply with the doctor's request means a loss of good-will, and consequently business, and I do not know of a single pharmacist who would wilfully disregard such a request. Where prescriptions are needed in a hurry, the additional time required to copy the formula on the label in compounding them is sometimes an objection.

Viewing the subject in all of its phases, I am therefore of the opinion that generally it is a practice more valued in the "breach than in the observance."

Yours very truly,

JOSEPH P. REMINGTON.

ELECTRODE FOR URETHRAL STRICTURE.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: The description of a modification of my electrode for the treatment of urethral stricture made by Dr. Debedat, which is quoted in the issue of March, page 196, of your esteemed journal, is exactly the same as my original instrument. In former papers published I described it as follows: "The only points not insulated and acting as conductors are the extremities. The rest of the electrode must be well insulated, smooth, and without inequalities." The only point at which the galvanic current is concentrated is in the bulb and nowhere else.

I am misquoted and misunderstood so often that I acknowledge with pleasure Dr. Debedat's agreement with me in the principle of the use of electrolysis. He must have received a faulty instrument, which the manufacturer passed off as Newman's electrode, and Dr. Debedat corrected it so that my original design was restored, for which good sense I have to compliment him. Manufacturers of instruments often make faulty designs and produce an entirely different appliance, what they call an improvement, and the inventor is helpless, as he cannot patent his own creation. My instrument makers, Geo. Tiemann & Co., New York, have made my original electrodes, and they send description with woodcuts to the profession.

If you give this explanation a place in your esteemed journal, it will greatly oblige,

Yours most truly,

ROBERT NEWMAN.

New York.

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* Knowing that Professor Remington was opposed to the proposition of Dr. Stahl as advanced in his article published in this issue of the GAZETTE, the editor asked Professor Remington to express his views to our readers, which he has done in this letter.

From THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

"AT the Forty-fourth Annual Meeting of the American Medical Association, Llewellyn Eliot, A.M., M.D., Surgeon to Providence Hospital and Eastern Dispensary, and President of the Medical Association of the District of Columbia, etc., Washington, D. C., in an article read before the Section on Obstetrics, said:

"In irrigating these cases, we may use the solution of bichloride of mercury, carbolic acid, or any other medication which individual preference may suggest; for my part, I employ a solution of ***Tyree's Antiseptic Powder,*** *which consists of: parts sod. bor. 50, alumen 50, ac. carbol 5, glycerin 5, the cryst. prin. of thyme 5, eucalyptus 5, gaultheria 5 and mentha 5."*

Packages containing eight ounces (sufficient to make eight gallons of Standard Antiseptic Solution), 80c., obtainable from druggists, or sent direct, carriage prepaid, on receipt of price.

Tyree's Antiseptic Powder

What can better attest its high reputation than the fact that recognition is given it by so high an authority?

You can prescribe bichloride, carbolic, permanganate, hydrastis, tannin, zinc, or lead, for Leucorrhea, and Gonorrhea, if you want to, but you can't get any more positive results, quicker effects, harmless but durable impressions, no matter what you use, than Tyree's Antiseptic Powder will give you. It comes as near absolute perfection as material and skill can make it. Nothing can be put into a preparation for inflammation of the vagina and cervix to make it more desirable and satisfactory than is found in this one. You get the best antiseptic astringent and detergent known, all in one so modified by proportion and treatment that their individual objections have been eliminated.

J. S. TYREE, Chemist, Washington, D. C.

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ARE OFFERED TO PHYSICIANS AT NET PRICES.

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Give measure 2 inches below Navel.

State if for Prolapsus, Retroversion, or Anteversion.

Net Price to Physician

$2.50.

FLAVELL'S ELASTIC TRUSS

Can be Worn Day and Night.

PNEUMATIC PADS

PNEUMATIC PADS

SINGLE TRUSS	Adults
A, Plain	$1.50
B, Fine	2.00
C, Silk	2.50
DOUBLE TRUSS	**Adults**
A, Plain	$2.50
B, Fine	3.00
C, Silk	4.00

Give circumference of abdomen on line of Rupture. State if for Right or Left.

ELASTIC STOCKINGS.

NET PRICE TO PHYSICIANS	SILK each	THREAD each
A to E	$2.50	$1.50
A to G	4.00	2.50
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C to E	1.50	1.00
E to G	1.50	1.00
A to C	1.50	1.00

Give exact circumference in all cases. We allow for expansion.

ABDOMINAL SUPPORTER.

NET PRICE TO PHYSICIAN.

Silk Elastic	$3.25
Thread Elastic	2.50

Give exact circumference of abdomen at K, L, M.

Goods sent by mail upon receipt of price.
Safe delivery guaranteed.

G. W. FLAVELL & BRO.,

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THERE IS NO PROVOCATION

and no room for any preparation which is merely **GOOD**; there are many such already. To be generally used by Modern Practitioners, a remedy must exhibit SUPERLATIVE merit when measured by RESULTS only.

This desideratum has been attained in

DIALITH

A new Granular Double Salt of Lithium in combination with Phosphates and Laxative Salts of Sodium.

INDICATIONS:

Diseases of the Liver (Hepatic Torpor, etc.), Malaria, Rheumatism, Gout, Lithæmia, Diseases of the Bladder and Kidneys, Obesity, Alcoholism, Biliary Calculi, Habitual Headache, Neuralgia, Constipation, and for the uric acid diathesis generally.

DIALITH exhibits a selective and specific action on the

Liver, Kidneys, and Genito-Urinary Apparatus.

IT IS A PERFECT SUBSTITUTE FOR CALOMEL

in many conditions in which this drug is seemingly indicated and may be used with perfect safety with none of the sequels attendant upon the internal administrations of mercury.

DIALITH is too expensive for free distribution. Small sample on receipt of 25 cts. or full size bottle for $1.00 sent carriage prepaid.

Your money back if not satisfied.

ANTIBRULE CHEMICAL CO., 708-710 Pine St., St. Louis, Mo.

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Is an emmenagogue, not abortifacient. It cures congestion of the uterus and ovaries, and favors the occurrence of the menstrual discharge. It is also especially appropriate when the amenorrhea depends upon anemia. It regulates menstruation, and is useful in all the derangements of menstruation, namely, amenorrhea, dysmenorrhea and metrorrhagia, provided these disturbances be idiopathic. By curing menstrual disease, a common cause of sterility, it will also cure the sterility. It is also recommended in erosion of the cervix and vulvar eczema.

The Pages of

The Therapeutic Gazette.

Each issue of the GAZETTE numbers 112 pages—72 pages of text and 40 pages of advertising.

Within the 72 pages of text, not a single line of advertising is ever printed. There are no advertising inserts; no commercial notes of any description whatsoever. We regard each subscription as a contract with the physician to furnish him monthly with 72 pages of the most reliable information that can possibly be collated upon the subject of therapeutics. Each contract with an advertiser is for certain prescribed space within pages numbered from 1 to 40 inclusive, second, third and fourth covers added.

Guarding your rights along these lines as carefully as we do, we beg of you to read the announcements of our advertisers, and favor them with inquiries and requests for samples; and when so doing, please be so kind as to mention having seen the advertisement in the THERAPEUTIC GAZETTE.

To the notes below and on the following pages, also in future issues, we respectfully direct your attention.

Very truly yours,

THE BUSINESS MANAGER,

Box 484, Detroit, Mich.

WITH extreme satisfaction, owing to the resignation of Dr. E. S. Pettyjohn, the Alma Sanitarim Co. informs the medical profession that George F. Butler, Ph.G., M.D., has been appointed Medical Superintendent, assuming control May 1, 1900. By the appointment of Dr. Butler the highest efficiency of the institution is assured, and under his competent and assiduous direction it may be safely presumed that the reputation already acquired by the Sanitarium will receive fresh impetus.

Dr. Butler's standing in his profession is too well established to require extended comment; yet a few facts relating to his experience may be opportunely cited.

Graduating from Rush Medical College, Chicago, in 1889, as valedictorian of his class, Dr. Butler was quickly appointed attending physician to the institution, in the department of diseases of children, Central Free Dispensary. In the following year he was chosen lecturer on medical pharmacy, and during the winter of 1890–91 was assigned to a course on materia medica and pharmacy in the Northwestern University Woman's Medical School.

In 1891 Dr. Butler was appointed physician to the ear department of the Illinois Charitable Eye and Ear Infirmary, and in the following year was called to the chair of materia medica, therapeutics, and medical pharmacy in the Woman's Medical College, Northwestern University.

In May, 1892, he was appointed Assistant City Physician of Chicago. In 1894 he resigned his position in Rush Medical College to accept the chair of materia medica and clinical medicine in the College of Physicians and Surgeons, Chicago (Medical Department of the Illinois State University), a position he holds to-day.

Dr. Butler is attending physician to the Cook County Hospital and Professor of Internal Medicine in the Chicago Clinical School. He also holds the position of Medical Director of the Illinois Life Insurance Company, Chicago. He is a member of many professional societies, among which may be mentioned the American Medical Association, the Illinois State Medical Society, the Chicago Medical Society, the Chicago Society of Internal Medicine, the Chicago Pathological Society, and the Physicians' and Therapeutic Clubs. He is a Fellow of the Chicago Academy of Medicine and a member of the Mississippi Valley Medical Association. He is also a director of the Press Club of Chicago.

Dr. Butler has contributed eminently to medical literature. His text-book, Materia Medica, Therapeutics and Pharmacology, has received wide acceptance by the medical profession, and is recognized as a standard work. He is editor and proprietor of a new periodical, *Doctors' Magazine*, already welcomed cordially by the medical profession, and likely to have a wide circulation because of its independence of tone, its scientific value, and its recognition that the laity is not to be absolutely excluded from intelligent participation in the interests of the medical profession.

The Sanitarium Co. has received a large number of congratulatory letters from the most eminent practitioners in the Middle West, attesting in the strongest language the high professional standing and marked ability of Dr. Butler and predicting great success in his new field of labor.

We, therefore, have no doubt that under the wise administration of Dr. Butler, the Alma Sanitarium will prove even more beneficial to invalids than it has been in the past, and ask your cooperation in favor of its well deserved patronage.

WHY I USE PEPTO-MANGAN "GUDE"—AN EXPERIMENTAL DEMONSTRATION.—Some five years ago I wrote a paper for the *Memphis Medical Monthly*, giving a *résumé* of the evolution of the iron compounds, and appended a report of cases giving blood-counts, etc. The manufacturers of the preparation I preferred saw fit to reproduce the case reports in their pamphlets, but said nothing about the reasons that induced me to prefer their product.

At a recent joint meeting of physicians and pharmacists I was criticized for opposing the use of ready-made compounds, while still advocating the use of Pepto-Mangan "Gude," which is a proprietary preparation.

"Especially the BUFFALO LITHIA WATER of Virginia"

FOR ALBUMINURIA AND CHRONIC BRIGHT'S DISEASE.

Samuel O. L. Potter, A.M., M.D., M.R.C.P., *London, Professor of the Principles and Practice of Medicine in the College of Physicians and Surgeons, San Francisco,* a recognized authority wherever medical science is known, in his handbook of Pharmacy, Materia Medica and Therapeutics, under head of **ALBUMINURIA,** page 600, 7th edition, **in the citation of remedies,** says: **BUFFALO LITHIA WATER of Virginia, is highly recommended."**

Under head of **CHRONIC BRIGHT'S DISEASE,** page 601, same edition, **in the citation of remedies,** he says: **"Mineral Waters, especially the BUFFALO LITHIA WATER of Virginia, which has many advocates."**

Dr. Alfred L. Loomis, *late Professor of Pathology and Practical Medicine in the Medical Department of the University of New York,* wrote: "For the past four years I have used **Buffalo Lithia Water** in the treatment of **Chronic Bright's Disease of the Kidneys,** occurring in **Gouty and Rheumatic subjects with marked benefit."**

Dr. Graeme M. Hammond, *of New York, Professor of Diseases of the Mind and Nervous System in the New York Post-Graduate Medical School and Hospital: "In all cases of* **Bright's Disease of the Kidneys,** I have found **Buffalo Lithia Water of the greatest service in increasing the quantity of urine and in eliminating the Albumen."**

Wm. B. Towles, M.D., *late Professor Materia Medica and Therapeutics University of Virginia:* "The effects of **Buffalo Lithia Water** *are marked in causing a disappearance of Albumen* from the urine and in *Bright's Disease of the Kidneys,* I have witnessed decided beneficial results from its use."

Water for sale by druggists generally. Pamphlet sent on application.

THOS. F. GOODE, PROPRIETOR, Buffalo Lithia Springs, Virginia.

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I hesitated considerably about bringing the matter up again, because I dislike to build up a reputation as an indorser, *and have never in any other instance written an article indorsing a proprietary preparation.*

I hope, however, to show you this evening that there is no pharmacopœial preparation that meets the requirements of an ideal iron compound, and, until this is found, I intend to continue to use what has never disappointed me, and is not based upon mere faith. The work of Bunge is too well known to be now quoted, and I will only make a few experiments before you this evening and show the reasons for the faith that is in me. There may be other proprietary iron compounds, and doubtless there are, that will come up to the same requirements, but I see no advantage in swapping the devil for the witch.

It is not necessary to repeat all the tests with all the official iron preparations, because they are divisible into groups, all the salts of one group behaving very much alike toward the gastric and intestinal juices.

An ingenious theory recently put forward regarding the action of the mineral salts of iron is, that they decompose the substances in the intestinal tract which precipitate the *food iron* so that it may be absorbed. This is the only rational explanation of the fact that we do occasionally get results from them. On the other hand, it is far more rational to use an iron compound that can be and is absorbed, for then we are reckoning with known quantities, instead of blundering along, giving more iron at a dose than is contained in the entire body, and incidentally deranging the digestive functions by precipitating the gastric, pancreatic, and intestinal juices, and producing constipation by reason of the very astringent nature of some of the iron salts.

Beginning with the organic double salts, of which the scale salts are representatives, we notice upon the addition of this gastric juice that a precipitate is formed; the double salt is decomposed and ferric salt remains, which is insoluble, both in gastric and intestinal juice.

The tincture of ferric chloride will precipitate some of the gastric constituents, though most of the iron will remain in solution in the hydrochloric acid; the iron still in solution will not be absorbed, because its non-diffusibility is taken advantage of in the manufacture of *dialyzed iron,* the acid passing through the animal membrane; when the iron finally reaches the intestine, the alkaline carbonates promptly precipitate it. Ferrous sulphate behaves similarly. In both instances, as you see, the very insoluble ferric oxide is finally formed. If you have ever tried to remove iron stains from your water pitcher, you have some idea how insoluble it is.